

STRUCTURAL BUDGET INDICATORS AND THE INTERPRETATION OF FISCAL POLICY STANCE IN OECD ECONOMIES

Robert W.R. Price and Patrice Muller

CONTENTS

Introduction	28
I. Definition and measurement	29
Conceptual issues: interpretation and usage	29
Potential growth and the cyclical sensitivity of budget deficits	32
II. Structural budget trends	35
General government budget balance trends and the position in 1984	35
Medium-term prospects for structural budget deficits	39
III. Sources of structural budget deficits	40
Structural public expenditure and revenue trends	40
Income transfers and social security	42
The debt service burden	43
IV. Structural budget adequacy: private saving, public debt accumulation and the net-of-interest budget balance	45
Assessing the normality of structural budget balances	45
Structural budget deficits and private saving	47
Public debt accumulation and portfolio pressures	50
Structural budget balances net of debt interest	54
V. Interest payments, inflation-adjusted deficits and the choice of structural budget indicators	59
Nominal interest payments and adjustment for inflation	59
The choice of short-term fiscal impact indicators	60
Conclusions	64
Bibliography	71

The authors are members of the Monetary and Fiscal Policy Division of the Economics and Statistics Department. They wish to thank C.I. Higgins and J-C. Chouraqui for their contributions to this paper and are grateful for the assistance of other colleagues of the Department.

INTRODUCTION

Many OECD governments see persistently high budget deficits and the associated accumulation of public sector debt as part of the economic malaise and an impediment to satisfactory recovery. Hence the priority given to their reduction in the current anti-inflationary strategy. However, attempts to cut deficits have been hampered by the adverse impact of the recession on employment-related revenues and expenditures, and progress towards the long-run restructuring of budgets has been partly obscured by the difficulty of disentangling fundamental budget problems from temporary ones. Budget deficits vary automatically with the business cycle; revenues rise as the economy expands, while unemployment transfers are reduced, so that the "built-in stabilizer" component of the deficit is self-cancelling as the cyclical output gap is closed. The deficit or surplus remaining at the normal cyclical peak is then "structural" in the sense of necessitating deliberate policy action for it to be changed. It is thus important to distinguish between structural or medium-term budget factors, which may need deliberate policy action to correct, and cyclical fluctuations in the public sector deficit, which will be self-correcting as recovery proceeds.

This paper examines the distinction between structural and cyclical budget deficits from a number of viewpoints. First, to what extent do OECD countries face structural deficit problems? And how have these arisen? Such questions involve difficult problems of definition and measurement. Second, how should the appropriateness of current structural budget balances be judged? The criteria involved here extend beyond the balancing of government deficits with the flows of private saving; at issue are the financial market pressures arising from increasing government indebtedness, the ensuing debt interest obligations and the trade-off between the short-term demand advantages of structural deficits (the absorption of temporary excess private saving) and the adverse medium-term consequences of continuous government debt accumulation. A third issue relates to the choice of the most appropriate indicator of fiscal stance from the point of view of analysing budgetary impacts on the economy.

Section I of this paper deals with the concept and measurement of structural budget balances, together with their trends; Section II looks at the origins of structural deficits, in terms of public spending components and taxation. Section III then discusses the appropriate criteria for determining structural budget objectives,

and the problems of co-ordinating short-term fiscal stance with medium-term structural budget needs. Section IV examines the relative merits of the various structural budget indicators from the point of view of assessing the impact of the budget deficit on goods and financial markets.

I. DEFINITION AND MEASUREMENT¹

Conceptual issues: interpretation and usage

The cyclically-adjusted indicator has advantages over the unadjusted budget balance in a number of respects:

- i) **Analysing short-term fiscal stance.*** The cyclically-adjusted budget balance can be interpreted as an index of "discretionary" policy action in the sense of identifying budget deficit changes as a cause rather than an effect of variations in economic activity. Budget deficits tend automatically to rise as private sector demand falls, because tax yields decline and unemployment-related expenditures rise. Such "automatic stabilizers" may, however, conceal deliberate policy interventions (changes in spending programmes or tax rate alterations) which may themselves be a source of demand disturbance in the economy.
- ii) **Medium-term budget planning and control.*** Separating cyclically self-correcting changes in the budget from more permanent shifts may enable the longer-run course of public spending and taxation to be controlled more efficiently. Short-term tax and spending variations designed to balance the budget throughout the cycle would involve substantial disruption. This may be avoided if cyclical budget disturbances can be separated from underlying structural budget trends.
- iii) **The pursuit of continuity and stability in budget making.*** To set and pursue budget balance targets independently of the business cycle "automatic stabilizers" must be offset. This approach might be justified if such "stabilizers" have adverse marginal effects on financial and labour markets and offsetting them diminishes credit market pressures or enhances economic incentives. But such offsetting action can be destabilizing in a pro-cyclical way if demand is cut so far that deficit and credit market pressures remain – as may especially be the case when countries are deflating collectively². If allowing automatic stabilizers to operate does not entail interest rate or monetary control costs, following a structural budget rule may offer more stability than either traditional counter-cyclical "fine-tuning" or budget balance targets which imply pro-cyclical budget interventionism.

iv) Monitoring *financial* market pressures. Private sector credit demands may be lower in periods of cyclical demand weakness, and financial markets may thus be unaffected by fluctuations in government borrowing which are perceived as temporary. In this case, interest rates may be influenced more by the trend accumulation of government debt in private portfolios over the cycle, including the expected competition for loanable funds as private investment recovers. The structural budget deficit may then be a better gauge of prospective government interest rate pressures than the actual budget deficit.

The cyclically-adjusted budget is not, however, without its drawbacks. As a method of describing fiscal policy stance it suffers from two (conceptual) deficiencies. First, it embraces rather a wide set of "discretionary" policy actions, including inflation-induced fiscal drag and variations in nominal debt interest payments³. This defect, of course, does not make the actual budget deficit itself a more satisfactory indicator of fiscal stance; it argues for a degree of disaggregation and "inflation adjustment" when constructing a summary indicator of budgetary policy. Second, the indicator's relevance to economic policy analysis is, to some extent, model-dependent: its role would be limited if structural budget changes were "fiscally neutral" in the sense of being ineffective in explaining even short-term economic variations. Longer-run fiscal ineffectiveness would not, however, be an argument against the usefulness of the concept; indeed, it is perfectly compatible with conventional economic models incorporating short-term fiscal policy impacts on demand followed by (either partial or complete) "crowding-out"⁴.

A structural budget approach has often been seen as aiding medium-term public spending control. Linking public expenditure to the longer-run trend increase in national output frees spending programmes (and taxes) from arbitrary and disruptive short-term adjustments. Any shortfall in tax receipts caused by fluctuations in GDP would be automatically – but temporarily – made up by extra government borrowing. Such a strategy has traditionally been seen as creating a climate of stability both for public sector planning and for economic growth at large. But the over-optimistic economic growth projections on which public spending plans have been based have tended to lead to unexpected and unwanted increases in the public sector's share of resources. "Temporary" budget deficits have become structural and permanent. Budget planning has come to emphasize the need for public spending growth to be revised downwards in recession and for public borrowing to be prevented from automatically increasing by the full amount of short-term revenue shortfalls. However, in determining the rate at which deficits and spending should be cut back since the second oil shock, governments have not been able to ignore the impact of the cycle on the budget.

"High employment" budget targets traditionally have been used as a means of promoting economic expansion and achieving high employment, insofar as these

objectives have been seen to depend on the "fiscal impulse" given by counter-cyclical fiscal stance. In Germany, for instance, the Council of Economic Experts initially defined the the budget deficit net of cyclical revenue effects as a measure of its "cyclical impulse": an acknowledgement that deliberate variations to the structural component of the deficit could, if properly timed, enhance the stabilizing effectiveness of fiscal policy⁵. Similarly, in the United States the Council of Economic Advisers has sometimes used the "high employment" deficit as a "self-fulfilling" means of stabilizing the economy and the budget at a high level of resource utilisation⁶.

The association of "high employment budgeting" with monetary accommodation, accelerating inflation, high interest rates and growing unemployment has tended to undermine the concept as a normative basis for budgetary activism. With the adoption of monetary targeting, budgetary stance has frequently been subordinated to anti-inflation and monetary control objectives, as policies have reverted from a belief in long-term "trade-off" between higher inflation and employment. If reducing inflation is seen as more beneficial for longer-run growth than sustaining short-term demand then the distinction between automatic stabilizers and structural budget deficits becomes inappropriate as a policy framework. Disinflationary monetary targets and interest rate reductions take on the role of stabilizers instead.

However, beyond a certain point where inflation and interest rates become insensitive to budget cuts, targeting on the actual (unadjusted) budget deficit – which amounts to offsetting "built-in stabilizers" – will be counter-productive. Thus, defining fiscal objectives in cyclically-adjusted terms has come to be seen as *preventing* unnecessary short-term budget interventions rather than enhancing "fine tuning". The 1982 Canadian budget strategy, for instance, rejected targeting a particular level of actual deficit regardless of the economic conditions prevailing at the time⁷. Such action may be destabilizing, amounting to pro-cyclical fiscal interventionism. Similarly, the FY 1982 US Budget acknowledged that "the business cycle does cause variations that are difficult to calculate and offset"⁸.

Moreover during a recession the borrowing requirements of business and consumers tend to be small, so that a given budget deficit can be financed with less pressure on interest rates. Thus:

"it is not only the annual deficit that affects the economy but also *the trend of deficits over the cycle and beyond*. Because of the structure of certain spending and tax programs, deficits tend to vary conversely with the economy. To some extent, deficits that are generated when the economy is weak can be made up when the economy is strong. It is the trend of deficits which serves as an indicator of fiscal discipline"⁹.

There has thus been a widespread *de facto* recognition that cyclical government borrowing may be more manageable than budget deficits which persist as recovery

takes the economy to fuller levels of resource utilization. If financial markets take a longer-term view of government credit demands, the budget balance averaged over the cycle may be a better indicator of "crowding out" pressures than the actual budget deficit¹⁰.

Though a forward-looking, cyclically-averaged budget indicator may have advantages from the point of view of monitoring financial market pressures, the structural budget indicator, as conventionally defined, is an inadequate guide to underlying changes in the stock of government debt. "Built-in stabilizers" add to government indebtedness, even though they are temporary in flow terms. It is, however, possible to construct a structural budget indicator consistent with the *trend* accumulation of government debt if the cyclical adjustment is estimated by reference to the gap between actual GDP and "trend" (mid-cycle rather than peak-cycle) output. The cyclical contributions of the economy to the budget balance would then net out over the cycle, being positive at peak cycle, negative at the trough and summing to zero. The structural budget balance would (to an approximation) then show the rate of cyclically-adjusted debt accumulation. Estimates of structural budget balances on this basis are provided in Section IV below.

Potential growth and the cyclical sensitivity of budget deficits

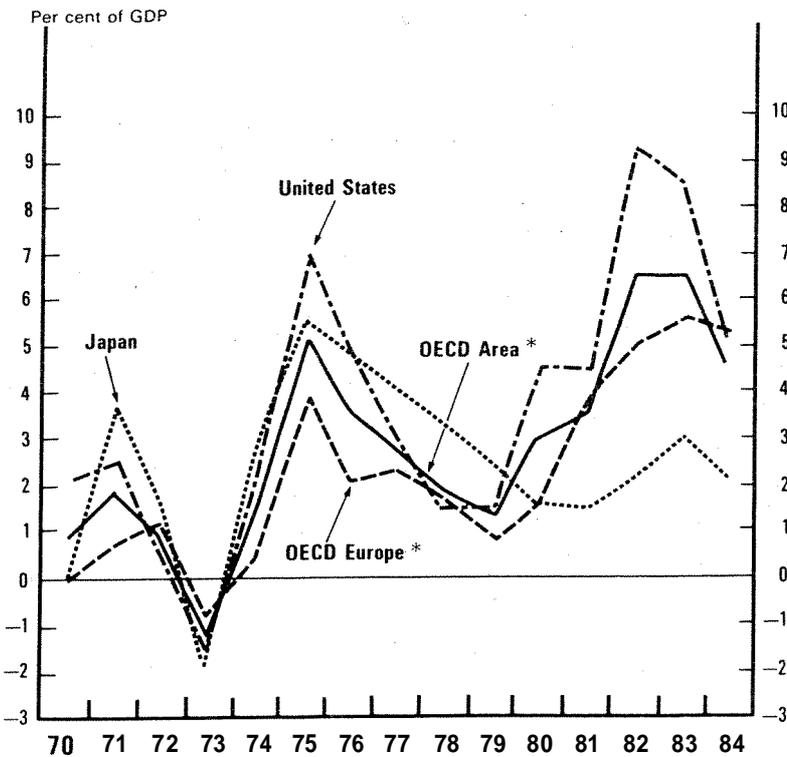
The estimation of structural deficits involves measuring automatic short-term variations in the budget deficit, via a process of "cyclical adjustment". Among the most important questions of definition and measurement which immediately arise are, first, the specification of the long run growth path of the economy, which permits an identification of the gap between actual and potential output (the "GDP gap"); and second, the sensitivity of the tax system, and unemployment benefits, to the gap.

Productive potential and the "GDP gap"

Perhaps most crucial to the structural budget calculation is the estimate of "cyclically-corrected GDP", or "potential output". This is trend output measured from peak to peak. It implies neither a fixed capacity utilization rate nor a constant employment rate (still less a "high employment" rate). Structural changes in the labour market have to be allowed for. Rather, the potential output calculation is meant to track the trend path of GDP if cyclical divergences between aggregate demand and supply were absent. It is difficult to measure operationally because the *next* peak is, of course, not precisely known; but the assumption is that "potential output" corresponds to the capacity utilization rate to which OECD economies recover without fiscal and monetary stimulus. This implies a judgement that such output is compatible with stable inflation and price expectations and sustainable

external balance¹⁰. The object of the measure is to estimate what deficit would remain when the economy recovers – i.e. the tax receipts which governments can expect to accrue automatically, not those that *would* accrue if the economy were at some notional "high employment" output. If recovery leaves a higher unemployment level than the previous peak this extra unemployment is assumed to be structural at the new peak.

CHART 1
Output Gaps (a)
 (percent of GDP/GNP)



(a) The output gap is defined as: $[(\text{potential GDP}/\text{actual GDP}) - 1] \times 100$.
 * Weighted averages of the countries shown in Table 2.

Productive potential and the "output gap" between actual and potential GDP have been estimated by extrapolating a long-run trend growth of output from a peak of high employment in the early 1970s to a peak in the late 1980s (Chart 1). The choice of base year (generally 1970-71) is somewhat arbitrary. It allows, where necessary, for the "over-heating" which occurred during the 1972-73 upturn when inflationary and/or balance of payments pressures emerged, making the peak output of those years unsustainable.

Because of balance of payments constraints, potential growth rates depend to a large degree on potential growth elsewhere. This sets limits on any longer-run divergence in growth trends among countries. To ensure consistency between prospective growth rates, therefore, the potential growth rates of most of the European economies have been derived from equations linking them with the trend

growth of productive potential in the major three OECD economies – the United States, Japan, Germany – plus Canada, which are taken as determining the rate of economic recovery in the OECD area. A collective recovery rate of just under 4 per cent per annum would be needed to close the 1983 output gap by 1988, compared with a rate of growth of 4% per cent per annum in the previous recovery”.

Uncertainty about potential growth must, however, be recognised as one of the most important drawbacks of structural budget balance estimation. Overestimating the extent to which budget deficits are attributable to the cyclical gap might, by sustaining too high a structural deficit, add to interest rate pressures and hence to slower growth and further expanding structural deficits. Since productive potential may depend in part on the structural deficit, there may be a degree of circularity between overestimating growth and underestimating the structural deficit – the one may lead to the other.

The past tendency has been to overstate the true cyclical component of the deficit. Growth rates of productive potential have been revised down continuously in the last decade, so that "automatic stabilizers" have become part of the structural budget problem, But underestimating the effect of the cycle can be dangerous too, if it leads to unnecessary deflationary action.

This paper attempts to chart a middle course between the dangers of underestimating and of overestimating the degree of policy correction needed to overcome structural budget problems.

The cyclical sensitivity of the budget deficit

The sensitivity of the deficit to output depends both on the cyclical elasticity of the tax base (the various categories of income and expenditures) and on the tax rate structure. It also depends on the extent to which unemployment benefits "replace" the wages of people becoming unemployed. Tax and transfer systems have seldom evolved with considerations of "built-in flexibility" in mind. Large institutional variations exist between countries, and these may cause significant cross-country differences in cyclical budget sensitivity. Assessing these sensitivities usually requires a structural model of the the fiscal sector – where marginal tax and benefit rates are directly specified – as well as a knowledge of the distribution of income and expenditures at high employment.

In the accompanying calculations, the fiscal parameters used are those embedded in the OECD's INTERLINK system. For the major seven taken as a group the sensitivity of public revenues and expenditures to the GDP gap is such that a one per cent shortfall in output results in an increase in the combined budget deficit of two-fifths of a percent of potential GDP, varying between 0.3 for Japan and 0.6 for the United Kingdom. Besides being related to differences in average and marginal tax rates, this budget deficit sensitivity depends on the relationship between unemployment (and hence unemployment benefits) and the cyclical output gap¹².

Prices are assumed invariant to the output gap, though in practice they may display a cyclical sensitivity¹³.

II. STRUCTURAL BUDGET TRENDS

General government budget balance trends and the position in 1984¹⁴

Though OECD countries have had broadly similar experiences, following the general shift toward deficit around 1975, detailed developments have differed (Tables 1 and 2). In particular, the United States appears to have been largely *sui generis* in as much as the general government budget was in structural budget surplus up to 1982. The federal budget, having been in structural deficit for much of the 1970s, had re-attained structural balance by the end of the 1970s (de Leeuw and Holloway, 1982 and 1984). With the actual deficit attaining 6 per cent of GNP, this balance had been transformed to a 3 per cent structural deficit by 1983. The structural surplus of the state and local sector almost offset this, however, so that the general government account was still only in modest structural deficit in 1983 and 1984¹⁵.

For almost a decade Japan has experienced a structural budget deficit, which tended to increase in the second half of the 1970s, as discretionary support for demand was augmented. Budget retrenchment has achieved a significant reduction in the structural deficit in the 1980s. Following a similar experience of rising structural budget deficits in the 1970s (but from a less pronounced peak than Japan), Germany now has a structural budget surplus¹⁶. In the United Kingdom, where the shift towards structural budget deficit emerged earlier than elsewhere, following the 1971-72 reflation, fiscal restraint has also resulted in a structural budget surplus.

In France the general government budget was in small structural surplus up to 1981, when expansionary fiscal measures moved the budget into deficit. Subsequent restraint has achieved approximate structural balance. The Canadian general government budget, though in average deficit in the last half of the 1970s, was also in virtual structural balance by the beginning of the 1980s. It has since moved back into deficit as a result of an expanding federal government deficit¹⁷. The Italian budget remains in large structural deficit despite recent policies of fiscal restraint.

Structural budget deficits for most of the smaller economies tended to widen (or surpluses to contract) from the mid-1970s. However, the level of deficit reached and the timing of corrective action to arrest this adverse trend have differed.

Table 1. **General government budget balances**

Percent of GDP/GNP

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
United States	-1.1	-1.8	-0.3	0.6	-0.3	-4.2	-2.1	-0.9	0.2	0.6	-1.2	-0.9	-3.8	-3.9	-3.1
Japan	1.9	1.4	0.4	0.5	0.4	-2.7	-3.7	-3.8	-5.5	-4.8	-4.5	-4.0	-3.4	-3.1	-2.3
Germany	0.2	-0.2	-0.5	1.2	-1.3	-5.7	-3.4	-2.4	-2.5	-2.7	-3.1	-3.8	-3.5	-2.7	-1.4
France	0.9	0.7	0.8	0.9	0.6	-2.2	-0.5	-0.8	-1.9	-0.7	0.2	-1.8	-2.6	-3.2	-3.5
United Kingdom	3.0	1.5	-1.2	-2.6	-3.7	-4.5	-4.9	-3.1	-4.2	-3.2	-3.5	-2.8	-2.1	-3.7	-2.8
Italy	-5.0	-7.1	-9.2	-8.5	-8.1	-11.7	-9.0	-8.0	-9.7	-9.5	-8.0	-11.9	-12.7	-11.8	-12.4
Canada	0.9	0.1	0.1	1.0	1.9	-2.4	-1.7	-2.4	-3.1	-1.8	-2.5	-1.1	-5.3	-5.9	-5.3
Spain	0.7	-0.6	0.3	1.1	0.2	0.0	-0.3	-0.6	-1.8	-1.7	-2.0	-3.0	-5.8	-6.0	-5.7
Australia	2.9	2.4	2.2	-0.2	2.4	-0.6	-3.0	-0.7	-2.2	-1.5	-0.6	0.5	0.4	-4.0	-3.7
Netherlands	-0.8	-0.5	-0.6	0.6	-0.4	-3.0	-2.9	-2.1	-3.1	-4.0	-4.1	-5.4	-7.4	-6.6	-5.9
Sweden	4.4	5.2	4.4	4.1	2.0	2.8	4.5	1.7	-0.5	-3.0	-3.6	-4.7	-6.2	-5.0	-3.5
Belgium	-2.0	-3.0	-4.0	-3.5	-2.6	-4.7	-5.4	-5.5	-6.0	-7.0	-8.2	-12.1	-11.0	-11.1	-10.3
Austria	1.0	1.5	2.0	1.3	1.3	-2.5	-3.7	-2.4	-2.8	-2.4	-1.3	-1.2	-2.6	-3.3	-2.3
Denmark	3.2	3.9	3.9	5.2	3.1	-1.4	-0.3	-0.6	-0.3	-1.9	-3.3	-6.7	-9.4	-7.8	-6.0
Norway	3.2	4.3	4.5	5.7	4.7	3.8	3.1	1.7	0.6	1.8	5.0	5.4	4.9	5.4	2.4
Finland	4.4	4.6	3.9	5.8	4.7	2.7	5.0	3.2	1.4	0.5	0.5	1.5	-0.5	-1.4	-0.7
Greece	-0.1	-0.9	-0.3	-1.4	-2.2	-3.4	-2.6	-2.1	-1.7	-1.9	-5.1	-12.6	-9.9	-9.9	-9.8
Ireland	-3.7	-3.5	-3.2	-4.2	-7.0	-11.3	-7.5	-6.9	-8.8	-10.7	-11.6	-13.9	-16.1	-13.6	-12.3
Total major seven	-0.1	-0.9	-0.6	0.0	-0.8	-4.3	-2.9	-2.2	-2.2	-1.7	-2.4	-2.5	-4.0	-4.7	-3.4
Total smaller countries	1.4	1.2	1.2	1.3	0.9	-0.9	-1.1	-1.0	-2.1	-2.5	-2.6	-3.7	-4.9	-5.4	-4.9
Total of above countries	0.1	-0.6	-0.4	0.1	-0.6	-3.9	-2.7	-2.0	-2.2	-1.8	-2.4	-2.7	-4.1	-4.3	-3.6
Memorandum items															
OECD Europe	0.4	-0.3	-1.1	-0.6	-1.7	-4.3	-3.1	-2.6	-3.4	-3.2	-3.1	-4.5	-4.9	-4.9	-4.4
EEC	0.1	-0.7	-1.7	-1.3	-2.3	-5.2	-3.9	-3.1	-3.9	-3.6	-3.5	-5.0	-5.2	-5.2	-4.7
Total OECD less U.S.	0.9	0.3	-0.5	-0.2	-0.8	-3.6	-3.1	-2.8	-3.9	-3.5	-3.3	-4.0	-4.4	-4.5	-4.0

Table 2. Structural budget balances
Percent of potential GDP/GNP

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
United States	0.0	-0.5	0.0	-0.2	0.7	-0.9	0.4	0.6	0.9	1.2	0.7	1.6	0.3	-0.2	-0.5
Japan	1.9	1.7	0.6	0.3	0.7	-1.9	-2.9	-3.1	-4.9	-4.3	-4.1	-3.5	-2.8	-2.2	-1.3
Germany	-0.1	-0.2	0.0	1.3	-0.5	-3.4	-2.2	-1.3	-1.7	-2.3	-2.5	-2.4	-0.9	0.5	1.7
France	0.9	0.7	0.4	0.4	0.7	-0.4	0.2	-0.2	-1.7	-0.8	0.8	-0.2	-0.6	-0.7	-0.1
United Kingdom	3.0	1.6	-0.8	-3.6	-3.7	-3.2	-3.4	-1.7	-3.8	-3.2	-1.1	1.8	3.3	1.6	2.0
Italy	-5.2	-6.7	-8.4	-8.3	-8.1	-10.1	-8.4	-7.3	-9.1	-9.7	-8.6	-12.0	-12.0	-9.7	-9.4
Canada	1.4	0.1	-0.2	0.2	1.1	-2.4	-2.0	-2.2	-2.9	-1.6	-1.7	-0.5	-1.2	-1.9	-2.1
Spain	0.7	-0.3	0.1	0.4	-0.6	0.0	-0.3	-0.8	-1.7	-1.1	-1.0	-1.3	-3.5	-3.7	-3.2
Australia	2.9	1.9	1.9	-1.1	2.0	-0.1	-2.7	1.0	-0.3	0.2	1.4	1.2	2.1	-1.6	-2.9
Netherlands	-0.8	-0.5	-0.4	-0.1	-1.1	-0.9	-1.9	-0.4	-0.8	-1.3	-1.5	-1.7	-1.9	-1.1	-0.8
Sweden	4.4	5.9	5.2	4.0	0.8	1.6	3.9	3.7	2.2	-1.7	-2.6	-2.1	-2.6	-1.6	-1.1
Belgium	-2.0	-2.3	-4.0	-4.8	-4.4	-3.9	-5.9	-4.1	-4.3	-5.1	-7.4	-9.1	-7.7	-7.0	-6.2
Austria	2.1	2.4	2.3	1.3	1.2	-0.5	-2.7	-2.1	-1.5	-2.4	-1.6	-0.2	-1.3	-2.2	-1.6
Denmark	3.2	4.4	3.2	3.9	3.9	1.7	0.1	-0.1	0.7	-1.9	-1.6	-2.7	-6.6	-5.5	-4.4
Norway	3.2	4.5	4.8	6.4	5.2	4.7	3.3	2.5	1.8	2.3	4.3	5.4	5.4	5.4	2.5
Finland	5.4	6.6	4.8	5.8	4.7	3.6	7.0	6.2	4.6	1.7	0.5	2.1	0.2	-0.9	-1.2
Greece	1.5	0.6	0.4	-1.4	0.0	-1.4	-0.8	0.1	0.0	-0.3	-3.0	-9.3	-5.7	-5.1	-4.9
Ireland	-2.5	-2.0	-2.7	-4.0	-6.8	-10.3	-5.7	-6.5	-9.2	-10.7	-11.7	-13.3	-14.3	-10.6	-9.1
Total major seven	0.4	-0.2	-0.4	-0.6	-0.2	-2.0	-1.3	-1.0	-1.6	-1.3	-1.2	-0.6	-0.9	-1.0	-0.7
Total smaller countries	1.6	1.6	1.3	0.7	0.5	-0.1	-0.7	0.1	-0.5	-1.3	-1.4	-1.7	-2.2	-2.6	-2.6
Total of abovecountries	0.5	0.1	-0.2	-0.4	-0.1	-1.7	-1.2	-0.9	-1.5	-1.3	-1.2	-0.7	-1.1	-1.2	-1.0
<i>Memorandum items</i>															
OECD Europe	0.4	0.0	-0.8	-0.9	-1.6	-2.7	-2.2	-1.5	-2.7	-2.9	-2.2	-2.4	-2.1	-1.7	-1.1
EEC	0.0	-0.6	-1.4	-1.6	-2.1	-3.4	-2.9	-2.0	-3.2	-3.3	-2.5	-2.9	-2.2	-1.7	-1.0
Total OECD less U.S.	0.9	0.5	-0.3	-0.6	-0.7	-2.4	-2.4	-1.9	-3.1	-3.0	-2.5	-2.4	-2.1	-1.8	-1.3

Structural deficits have reached their highest levels in Belgium and Ireland, prompting fiscal restraint from 1981. Budget austerity has been in place in the Netherlands for some time and has resulted in the more effective containment of the structural budget deficit. It is at the same, relatively low, level as the Austrian structural budget deficit, which has resulted from the more demand supportive policies pursued between 1981 and 1983. In Denmark and Sweden, fiscal expansion resulted in a marked trend to structural budget deficit from the mid 1970s, which tighter policies have recently reversed. Norway, by contrast, was in substantial structural surplus up to 1983, benefitting, like the United Kingdom, from North Sea oil revenues. In Spain and Finland fiscal policies have been relatively expansionary since OPEC II. Australia has followed an exceptional course. Having achieved a significant structural budget surplus by 1982, following policies of sustained fiscal restraint from 1976 onwards, fiscal expansion has recently opened up a structural deficit.

The two oil price shocks provide convenient benchmarks for the discussion of structural budget trends in the last decade:

- i) From the first to the second oil shock.* From a position of structural budget surplus at the beginning of the 1970s the majority of OECD economies (especially the major economies) shifted towards structural budget deficit (or lower surplus), partly because of the reflation of 1971-72, partly because of the demand-supportive stance adopted in the immediate aftermath of the first oil shock. Until 1979 a reversal of that tendency was apparent mainly in the United States, France, Australia and to some extent Canada. Elsewhere, structural budget positions tended either to deteriorate persistently (as in Japan and many of the smaller economies) or to improve at first but then to shift further towards deficit with the 1978 reflation (as in Germany and the United Kingdom).
- ii) After the second oil shock* there was a widespread adoption of deficit reduction policies, which may be seen in a general movement to lower structural budget deficit among the major economies apart from the United States. Many of the smaller economies have been slow to follow suit, but have tended to do so after an interval of budgetary support. However, the deterioration in the US structural budget balance, together with supportive budget policies in France (1981), Canada (1981-82) and Australia (1983) have meant that little aggregate movement towards lower structural deficit is apparent for the OECD as a whole.

The United States general government budget still appears to have been in smaller structural deficit in 1983 ($\frac{1}{4}$ per cent of potential GDP) than the rest of the OECD (just under 1 per cent). However, the United States and the rest of the OECD have arrived at this position from opposite directions: the one from a position of former surplus; the other from persistent structural budget deficit.

Medium-term prospects for structural budget deficits¹⁸

Announced fiscal objectives may afford considerable insights into prospective medium-term structural budget trends. According to the 1985 United States Budget, economic recovery to high employment would still leave a federal deficit of 3 to 4 per cent of GNP in 1988 (the spread depending on the implementation of proposed budget economies and on interest rates). This, by definition, would be wholly structural¹⁹. If the state and local surplus remains at its present 1 per cent of GDP this would give a general government structural deficit of between 2 and 3 per cent from 1986-88, a significant deterioration from approximate balance in 1983.

The trend towards lower structural budget deficit may continue in other major OECD economies. In Japan the structural budget deficit may fall to 1 per cent of GDP by mid-decade as the objective of phasing out "exceptional bond" issues to finance public consumption is achieved. German budgetary "consolidation" may tend to move the structural budget further into surplus at least in the near term, though the aim is to achieve a deficit of about 1 per cent of GDP by 1987. This would imply some future relaxation of structural budget stance as tax reforms are implemented. In France, also, fiscal restraint is expected to continue, though recovery would provide some room for tax cuts. As in the United Kingdom, where the Medium-term Financial Strategy is based on a public sector borrowing requirement of about 2 per cent of GDP from mid-decade, the *structural* budget trend depends on the room for "adjusting" fiscal stance by cutting taxes should economic activity grow faster (and the deficit more slowly) than projected. As Italy also aims to reduce the budget deficit, the overall trend among the major four European economies may be for a reduction in the average structural deficit to about ½ per cent in 1986-88. In Canada, the short-term discretionary support given to the economy in 1982-83 is tied to reciprocal reductions in the structural deficit from 1985.

For the major countries excluding the United States, continuing fiscal restraint would seem likely to result in a further fall in the collective structural budget deficit of perhaps 1 per cent of GNP between 1983 and 1985. With a 2% percentage point improvement resulting from economic recovery, this would leave a peak-cycle deficit of about ½ per cent of GNP from mid-decade – i.e. virtual structural budget balance. However, the impact of this is likely to be blunted by the increasing United States structural deficit, implying a general government structural budget deficit of about 1 per cent of GDP for the major seven as a group in the latter half of the 1980s.

III. SOURCES OF STRUCTURAL BUDGET DEFICITS

Structural public expenditure and revenue trends

General government expenditures rose substantially in the first half of the 1970s: from 32 to 35 per cent of GDP on a cyclically-adjusted basis between 1970 and 1975 for the OECD as a whole (Chart 2). The share then increased by a further 1 per cent up to 1978, and has since risen gradually to 38 per cent (Table 3).

The chief exception to these trends has again been the United States, where general government spending, *cyclically-corrected*, was almost steady as a proportion of GNP from 1970 (though federal spending increased from just over 20 to nearly 22 per cent²⁰). By contrast Japanese general government spending increased from (a relatively low) 19 per cent of potential GDP to 33 per cent, a faster rate of expansion than that for OECD Europe (37 to 47 per cent) and slower only than Sweden and Ireland, where public spending rose by about 20 percentage points.

Tax reductions, based on the rationale that automatic (and thus unlegislated) increases in income tax rates due to fiscal drag had taken the tax burden beyond the threshold of popular acceptance, have been the most important cause of the emerging structural deficit in the United States. In other major economies, effective

Table 3. Contributions of budget components to changes in the aggregate OECD structural budget balance

% of potential GDP

Minus sign = move to structural deficit

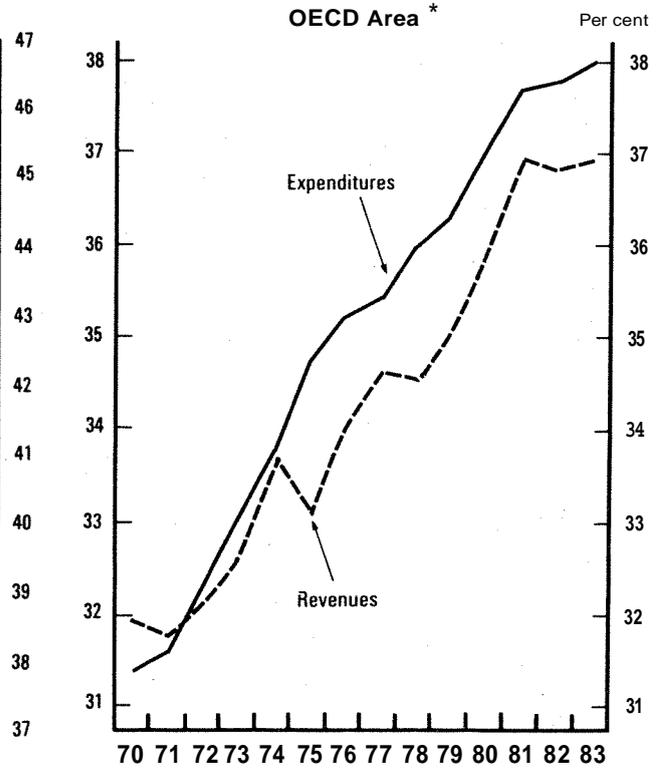
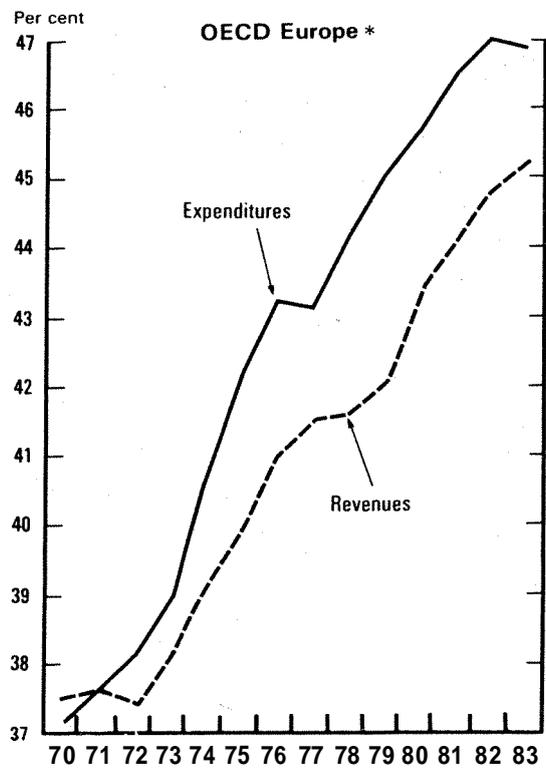
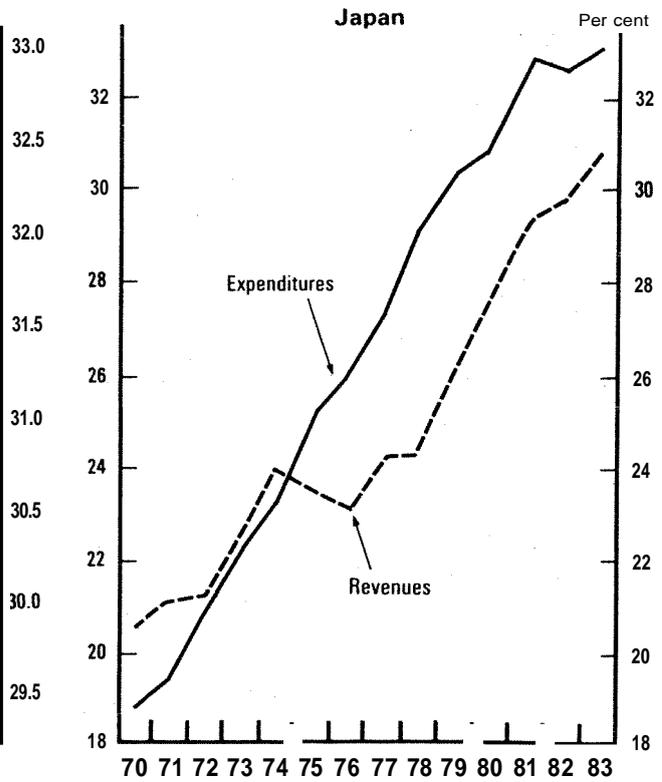
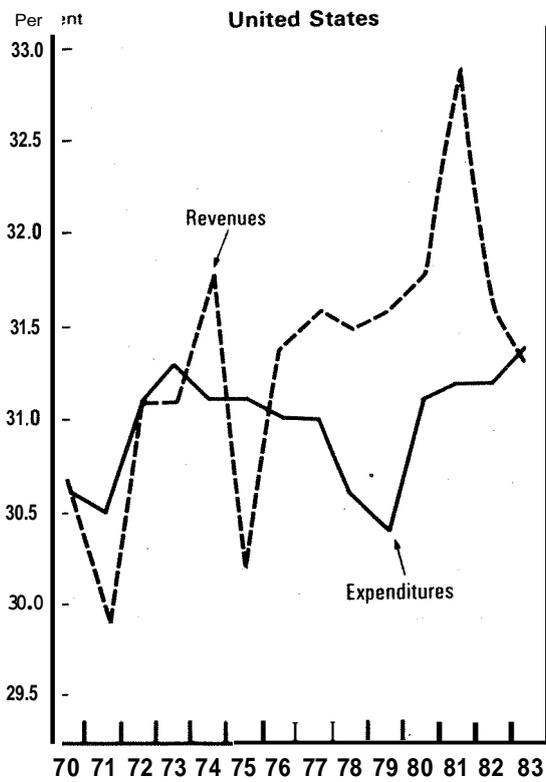
	Level	Change	Level	Change	Level	Change
	1970	1970-1978	1978	1978-1984	1984	1970-1984
Due to:						
A. Expenditure on goods and services						
<i>i)</i> Current expenditure ^a	18.3	-1.0	19.3	-0.2	19.5	-1.2
<i>ii)</i> Current tax revenues ^b	24.1	+0.3	24.4	+1.3	25.7	+1.6
<i>iii)</i> Investment	2.6	+0.1	2.5	+0.2	2.3	+0.3
B. Social security						
<i>i)</i> Expenditures	9.0	-3.1	12.1	-0.6	12.7	-3.7
<i>ii)</i> Revenues	7.2	+2.2	9.4	+1.2	10.6	+3.4
<i>iii)</i> Balance of social security ^c	-1.8	-0.9	-2.7	+0.6	-2.1	-0.3
C. Debt interest (net)	0.9	-0.5	1.4	-1.4	2.8	-1.9
Total	0.5	-2.0	-1.5	+0.5	-1.0	-1.5

a) Current expenditure on goods and services, plus subsidies.

b) Total current receipts excluding social security contributions and property income (including debt interest) receivable.

c) Social security outlays include other current transfers, so this is not to be interpreted as a change in the balance of social security funds.

CHART 2
**Cyclically-adjusted general government receipts
 and expenditures, 1970-1983**
 (Percent of potential GDP/GNP)



* Weighted averages of the countries shown in Table 2

tax rates have increased substantially throughout the past decade – from 32 per cent of GDP in 1970 to 40 per cent in 1983 – and have risen by 4 percentage points since the second oil shock, despite the fact that reductions in public spending/GDP ratios have been the most prominent feature of budgetary pronouncements. One problem faced by OECD governments has been the inability to adapt public spending sufficiently to changed circumstances and lower growth, and the need to find *ad hoc* revenue expedients to compensate. Table 3 looks more closely at this issue by ascribing structural budget changes to the various economic components of the budget:

- a) the balance of tax receipts and government spending on goods and services (current and capital);
- b) the balance of social security spending and contributions; and
- c) public debt servicing.

Because the relative cost of providing public services has risen, the amount spent by governments on public consumption has grown by just over 1 per cent in relation to potential GDP. This, however, accounts for only a small part of the deterioration in structural budget balance of the OECD as a whole (Table 3). Since tax revenues have expanded to match, the structural balance between current spending and current tax receipts (excluding social security) has actually tended to improve somewhat over the period. Between 1971 and 1983 tax receipts rose faster than current spending by about $\frac{1}{4}$ per cent of GDP on a cyclically-adjusted basis. Furthermore, capital spending has been cut.

Income transfers and social security

Social security spending on income maintenance (excluding benefits to the temporarily unemployed) has been one of the most dynamic forces behind the growth of public spending. It contributed, for the OECD as a whole, over half of the increase in share of public spending in potential GDP between 1970 and 1983. Most of this expansion of social security spending may be traced to the extension of eligibility criteria in the early 1970s, combined in some countries with an increasingly adverse population structure²¹. To an important extent, however, the rate of "take-up" of benefits seems to have been unanticipated and underestimated²².

Moreover, benefits are almost universally indexed, usually to prices. This is intended to preserve the real value of benefits, and fiscal indexation should, in principle, be economically "neutral", leaving the structural budget balance unaffected. However, the way indexation has been implemented has created upward spending pressures in some countries. Implementation difficulties have been particularly acute in the United States where a long-run upward bias has been built into some transfers by the choice of index²³. At the same time structural unemployment has increased. The amount of income replaced by unemployment

insurance schemes varies from 40 per cent or so to approximately 90 per cent in Denmark, France and the Netherlands. The cost to the government can be above 100 per cent of average take-home pay allowing for lost tax revenue and benefits paid. The eventual costs to the government depend on the duration of benefits, though supplementary grants usually substitute for insurance provisions once eligibility expires.

Because contributions have increased as a ratio of earned income there has been only a modest trend towards *structural* deficit in the combined social security accounts of OECD economies in the period 1978-83 (Table 3). Thus, social security transfers cannot be regarded as responsible for OECD structural budget deficits, except perhaps indirectly. Higher rates of contribution necessary to fund social security schemes may, for instance, have reduced labour demand and supply, thus reducing longer-run growth and shrinking the tax base. However, such effects are by no means certain.

The debt service burden

The tendency to structural budget deficit also has been re-inforced by the increased costs of servicing government debt. Gross interest payments reached nearly 3% per cent of GDP on average in 1983, an increase of 2% percentage points compared with 1970. The rise in net interest paid by governments accounted for all of the structural deficit increase in OECD economies between 1971 and 1983 (1½ per cent of GDP) (Table 3). This rise in debt service costs has three causes: meeting interest payments on the growing amount of outstanding debt; the higher *nominal* interest payments needed to compensate government bond-holders for the effects of inflation on the value of their assets; and the higher *real* interest rates required to lodge new debt issues, especially in the context of anti-inflationary monetary policies.

Outstanding debt and interest payments

OECD economies have experienced a marked increase in government indebtedness (see Section IV below), the ratio of net general government debt (gross liabilities less assets) to GDP rising by about 10 percentage points, on average, between 1970 and 1983. The increase has been of the order of 30-40 per cent of GDP in Japan, Germany and Italy, with smaller countries such as Ireland, Belgium, Denmark and Sweden and Austria also experiencing particularly rapid rises. Average interest payments on government debt have risen correspondingly. The increase of 10 percentage points in the aggregate OECD net debt/GDP ratio would, for instance, account for a rise of nearly ¾ per cent of GDP in government (debt service) expenditure between 1970 and 1983.

The effects of inflation and nominal interest rates

A further rise of $\frac{3}{4}$ per cent has occurred because of the rise in nominal interest rates over the same period. Part of this rise has been due to inflation, part to higher real rates of interest. If the purchasing power of domestically-held debt is adjusted for the loss due to price rises, a sizeable depreciation in the real value of outstanding debt results. Accurately foreseen, this "inflation adjustment" would be incorporated in the higher nominal rate of return asked by purchasers of government debt, and interest rates would precisely reflect this (plus a desired real rate of return). This would automatically raise interest payments and the nominal structural deficit.

However, during the decade up to **1981** the inflation-induced fall in the real value of their debt tended to exceed governments' interest payments, so that the average real rate of return on public debt appears to have been negative in many cases (even before tax)²⁴. If the "inflation adjustment" had been fully incorporated into the interest rate, government debt service in the OECD area would have averaged $2\frac{1}{2}$ per cent of GDP just after the second oil price shock in **1980**, whereas it actually amounted to $1\frac{1}{4}$ per cent. The difference is a measure of the "inflation tax" on bond holders – a negative real rate of return.

Real interest rates

Average real (pre-tax) interest rates on government debt have been positive since **1982**. The net interest bill was nearly 1 percentage point higher than the inflation adjustment in **1983**. Investors in government bonds have demanded a higher "real" rate of interest to refinance maturing – and new – debt as an insurance against a recurrence of this "inflation tax" in future. Moreover, in seeking to reduce such inflationary uncertainty, tight monetary policies have pushed up real rates of interest on the whole term structure of new debt issues. The structural budget deficit may have shifted upwards initially (but insufficiently) because of the higher inflationary component of nominal interest rates, but subsequently higher real interest rates have come to be an important structural element in government spending.

Of the items analysed in Table 3, higher interest payments are thus the most significant proximate cause of structural deficits. However, the expansion of the public sector and higher tax rates in general may have contributed, through allocative distortions, to slower long-run growth and hence to a structural tendency for public spending to outpace the growth of the tax base.

IV. STRUCTURAL BUDGET ADEQUACY: PRIVATE SAVING, PUBLIC DEBT ACCUMULATION AND THE NET-OF-INTEREST BUDGET BALANCE

Assessing the normality of structural budget balances

The extent to which the structural budget deficits measured and discussed above have diverged from "normal" levels depends on their appropriateness in relation to other structural phenomena in the economy and on the objectives of economic policy. Policies generally are based on the continuing need for further deficit reduction. This section examines some of the financial criteria involved in assessing the appropriateness of current trends and targets, though the issues involved also relate to tax and expenditure structures as well as financial market constraints²⁵.

Four interrelated considerations arise in assessing the appropriateness of present structural budget balances for the achievement of macro-economic policy objectives:

- a) The relationship between structural budget balances and monetary targets in the context of policies designed to reduce inflation and interest rates.
- b) The claims on private saving made by government credit demands, and the competition for loanable funds between public and private sectors as the recovery proceeds.
- c) The extent to which structural budget deficits are accompanied by growing government debt/GDP ratios and consequent portfolio pressures.
- d) The composition of government spending financed by government borrowing, given that a structural budget deficit used to finance consumption will have more adverse consequences for the future debt service and tax burdens than a deficit which finances productive investment.

The link between deficits and monetary targeting, and the process by which the "fine-tuning" approach to structural deficit control came to be replaced by "inflation first", medium-term, monetary control strategies has been described in Chouraqui and Price (1984a). Conventionally, demand management strategy tended to stress the need for government borrowing to offset private sector saving fluctuations, in order to smooth out the cycle and ensure recovery by a process of fiscal "pump priming". In this policy model peak-cycle structural deficits tended to be unnecessary (and even irrelevant), because accommodating monetary policies would allow fiscal policy to expand the tax base, making public spending virtually self-financing. Structural deficits would only be needed during the cyclical trough and upturn.

The new approach has emphasised the self-righting properties of economies (once freed of the structural impediments of high marginal tax rates), by which falling interest rates and the faster real monetary growth, for a given nominal money target, would result from lower inflation. Structural budget objectives have been subordinated to disinflationary monetary targets; budget deficit reductions are seen as beneficial up to the point where inflation and interest rate gains were unforthcoming. This development has been associated with the targeting of wider monetary aggregates, which in turn are linked directly to fiscal stance via the definition of the change in the domestic money supply as government borrowing, less sales of bonds to the non-bank sector (i.e. "funded" borrowing), plus bank lending. In this case lower public sector borrowing allows private demands for (bank) credit to be accommodated at a lower short-term interest rate. In the United States, on the other hand, the separation of fiscal and monetary authorities, the narrower definition of the money supply and the "supply side" priority given to tax- rather than deficit-reduction, have meant that monetary control has had, to rely *de facto* on monetary instruments alone.

This disinflationary policy mix has not been easy to implement because the implicitly "pro-cyclical" approach to budget deficit reduction – defined in terms of discretionary offsets to automatic stabilizers – may trigger "feedback" effects on the deficit²⁶. Tightening monetary policy and fiscal stance at the same time may, in the context of concerted international deflation, cut demand without reducing *ex post* deficits and relieving interest rate pressures. This can have adverse consequences for growth and capital formation (the so-called "low growth trap"). Moreover, for a given secular growth of the money supply, cyclical fluctuations in private credit demand would tend automatically to generate part of the savings necessary to finance deficits, so that cyclical deficits may add little to interest rate pressures. Worries about monetary aggregate stability have also been such that the link between fiscal restraint and interest rate cuts has been uncertain. This has all tended to put a greater premium on the role of the cyclically-adjusted budget as a means of distinguishing counter-productive short-term budget changes from necessary ones, so as to phase the adjustment to lower structural borrowing according to cyclical needs.

There is, therefore, a limit to the extent to which structural deficit changes should be used to achieve monetary targets and interest rate reductions. There is a potential benefit in a gradualist approach emphasising credibility and consistency in budget planning, and exploiting the forward-looking nature of financial markets. Correct speed limits for structural budget adjustment would seem critical to the success of budget "consolidation policies", insofar as attempting to cut deficits too rapidly in the short-term may have adverse consequences over the medium term. Conversely, focusing on the medium-term control of structural deficits may have immediate benefits for interest rates insofar as financial markets are forward

looking. By identifying and controlling medium-term budget trends, the structural budget approach may increase the room for short-term budgetary manoeuvre in some countries (Canada for instance). However, for individual countries counter-cyclical flexibility depends on market confidence in government consolidation policies and on the extent of existing indebtedness.

Structural budget deficits and private saving

With actual deficits remaining high, the authorities have had to rely on bond sales to the non-bank public ("funding") and historically high short rates to check the potential monetary creation associated with large deficits. Structural deficits have been associated with persistently high public sector claims on saving. Thus an assessment of the extent to which present and projected structural budget deficits may be inconsistent with the achievement of employment, growth and inflation objectives needs to take account of the flows of private credit with which the deficit has to harmonise in order to prevent the "crowding-out" of private investment²⁷.

Where private saving is persistently high, or private investment structurally weak (as may be the case where government intervention, via regulation, taxation, etc. makes market rates of return uncertain) there may be a presumption that structural government deficits are necessary in some economies to secure a return to potential output (cf. Wallich, **1982**). This would be especially true given the uncertainties attaching to monetary stabilizers noted above. There is thus the possibility that in terms of matching private saving flows a balanced structural budget would be inadequate. Conversely, to the extent that government deficits "crowd out" private investors from credit markets as activity rises, longer-run growth would be reduced because a lower investment ratio and lower capital stock would reduce productive potential. There is thus also the possibility that structural deficits may be too high for investment-led growth.

The effect of deficits on interest rates and the sensitivity of investment to them are crucial. If structural deficits do not raise interest rates and do not displace investment there might be little justification on demand management grounds for continuing to reduce them. To the extent that it is the average of (present and future) budget deficits over the cycle that matter for financial markets (see section V *b*) below), structural deficits which were properly phased, and expected to be temporary, might not "crowd out" cyclically-weak investment. The same arguments would apply as for automatic stabilizers, and the opportuneness of such deficits would depend on the ability to time budget interventions and avoid balance of payments and speculative exchange rate effects: doubts about which have tended to rule out active demand management (Chouraqui and Price, **1983**). It is, however, in the light of persistent, prospective government deficit/savings ratios over the

Table 4. Public sector claims on private saving
Ratio of the general government deficit to gross private saving averaged over five years^a

Percent

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
United States	3.6	6.8	7.1	7.9	8.3	7.2	4.1	2.7	6.0	10.8	15.1	18.0
Japan	-2.8	0.2	3.6	6.4	10.4	13.9	15.1	15.5	15.4	14.2	12.7	10.9
Germany	0.5	6.2	9.4	11.5	15.2	16.6	14.3	14.7	15.6	15.6	14.3	11.5
France	-3.8	-0.8	0.4	2.0	4.6	5.9	3.5	5.0	7.1	9.0	12.3	16.3
United Kingdom	2.6	12.7	20.6	22.5	23.8	22.3	20.2	17.6	16.6	16.9	17.0	16.3
Italy	30.0	34.5	35.4	34.2	34.7	35.2	32.6	35.0	38.8	41.3	44.3	47.8
Canada	-4.4	-0.8	1.1	3.7	7.9	11.4	11.2	10.5	13.0	15.2	18.4	20.4
Spain	-1.6	-1.0	-1.2	-0.3	2.6	4.5	6.8	9.9	15.4	18.0	20.3	21.1
Australia	-9.0	-5.6	-0.3	2.3	4.3	7.9	8.0	4.5	3.3	5.1	7.0	9.1
Netherlands	1.7	4.1	6.6	8.1	11.8	15.4	16.7	19.3	23.0	25.3	25.8	25.4
Sweden	-28.9	-25.8	-24.8	-21.1	-14.9	-8.6	-1.2	11.5	21.8	26.7	26.6	25.8
Belgium	12.8	15.5	17.6	19.4	21.8	26.3	30.0	36.5	42.1	46.5	48.8	49.4
Austria	-6.5	-3.2	1.5	5.7	9.5	12.8	11.6	9.3	9.3	9.8	9.7	10.5
Denmark	-25.7	-21.1	-14.6	-8.8	-1.2	5.9	9.0	17.3	26.9	34.9	38.5	38.2
Norway	-24.1	-25.2	-24.2	-21.2	-15.5	-12.6	-13.5	-15.1	-17.9	-20.5	-20.0	-15.7
Finland	-25.5	-23.8	-25.6	-25.3	-20.2	-16.2	-13.6	-8.3	-3.7	-0.8	0.3	1.0
Total major seven	2.6	6.6	8.4	9.8	11.6	12.0	9.9	9.4	91.5	14.0	16.3	17.6
Total smaller countries	-8.6	-6.3	-3.9	-1.6	2.2	6.0	8.1	11.0	14.9	17.6	19.0	21.0
Total of above countries	1.3	5.1	7.0	8.5	10.5	11.3	9.7	9.6	11.9	14.4	16.6	18.0
<i>Memorandum items</i>												
OECD Europe	1.4	6.2	9.1	10.7	13.5	14.9	13.9	15.3	17.5	19.1	20.1	21.1
EEC	4.3	9.8	13.1	14.6	17.1	18.1	16.3	17.2	19.0	20.4	21.5	22.0
Total OECD less U.S.	-0.4	3.8	6.8	8.9	12.0	14.2	13.8	14.6	16.2	17.1	17.7	18.0

a) The moving average is centred on the current year, and relates to years t-2 to t+2 (two years ahead). The 1983 ratios are based on the forecasts in *OECD Economic Outlook*, No. 35, June 1984, Table 9.

cycle, and particularly during the upturn, that the problem of structural deficits is most often discussed (Table 4). The shadow of *future* deficits has probably been an unambiguously negative factor on current activity. Expectations of future credit market pressures would tend to be reflected in higher long-term rates now, so that fears of too-high structural deficits may be acting as a drag on current OECD investment²⁸.

Given the balance of payments constraints and capital flows which characterise a system of open economies such as the OECD area, the structural budget problem has to be looked on in collective terms. On the one hand, the ability of an individual country to offset excess domestic savings at high employment may be constrained by the current balance of payments deficit which would accompany domestic dissaving. Capital flows (foreign savings) may finance the deficit, mitigating domestic interest rate pressures, but to the extent that a current balance of payments deficit results from the fiscal deficit, overseas rather than domestic activity is raised. The effective structural budget strategy would be different for a group of countries acting together compared to countries pursuing independent fiscal policies (Larsen *et al.*, 1983)²⁹. On the other hand, any extra demand for credit generated by an individual country's structural deficit may have effects on credit conditions elsewhere, raising the global demand for savings and hence interest rates. Any judgement about the adequacy of prospective structural budget deficits therefore needs to take in not just its impact on domestic private sector savings, but on the balance of payments and financial market consequences elsewhere in the international economy.

As a ratio of the flow of available gross saving, current general government borrowing is historically high in the United States (see Table 4 which gives a cyclically averaged series for this ratio); the budget deficit was equal to 23 per cent of gross saving in 1983 or 68 per cent of private savings net of capital consumption³⁰. The "structural" element in the deficit is presently small. But a 2-3 per cent deficit in the years 1986-88, when the economy is reaching its cyclical peak, would represent an abnormally high pre-emption of savings by historical standards. Since the household saving ratio is relatively low it has often been argued that balanced longer-run growth calls for a structurally balanced budget – with a surplus at actual high employment. But this would still allow for structural (and cyclical) deficits to be effective in raising demand at the trough, when private investment was low and credit availability high. However, a continuous prospective take-up of high employment savings by the government is a matter of concern. The resultant higher interest rates would tend to bias the recovery towards (public) consumption and the structure of public spending towards debt service payments, perhaps weakening longer-run growth. This concern is amplified since, as a counterpart to its current balance of payments deficit, the credit demands of the United States public sector have an impact on total credit demands throughout the OECD area, perhaps affecting recovery elsewhere³¹.

The Japanese case is different from the American. The high level of household saving *is* probably in structural excess of domestic private capital formation requirements. This would, in normal circumstances, call for long-run government absorption of domestic saving flows via debt issues, linked to public investment in social overhead capital. If the government does not absorb such saving, the alternative *is* to export surplus capital via a balance of payments surplus. It has thus been argued that a structural budget deficit of some magnitude is desirable in Japan. However, a complete appraisal of its desirability needs to take account of the cumulated impact of any persistent government borrowing to finance consumption on outstanding debt and debt interest payments. This is discussed further below.

In Europe, structural deficits averaged 3 per cent of GDP at the 1979 cyclical peak (15 per cent of gross saving), and despite budget "consolidation" policies the average deficit/saving ratio was at the same level (23 per cent) as the United States in 1983. In contrast to the United States, the structural trend is, however, downward, with the prospect of the average deficit/savings ratio for OECD Europe falling to about 5 per cent up to 1988 if budgetary retrenchment continues. The major three economies are likely to remain in average structural surplus of 1½ per cent of GDP (qualified by the possibilities of tax cuts), though the large government sector and moderately high saving ratio in Germany may indicate the need for a "normal" long-run structural budget deficit of just over 1 per cent of GDP. This is considered compatible with a balanced allocation of new credit to the government when the economy is in equilibrium (Council of Economic Experts, 1982). The same considerations might call for a "normal" structural budget deficit in most other major European economies, though this would need to be qualified by differences in private sector saving, social security funding conventions and the criteria governing the control and finance of public corporation investment.

Budget "consolidation" policies in the major European economies are thus relying on company investment to take up not just the structural saving of the personal sector, but also the the governments' **own** structural surplus. This is an uncharted route to economic recovery.

Public debt accumulation and portfolio pressures

Structural debt accumulation

The choice of a structural budget norm is made more complex when the "portfolio" effects of accumulated budget deficits – past or prospective – are taken into account. The ability to pursue a structural budget norm based on private sector savings "flow" considerations *is* governed, to a considerable degree, by the stock effects of persistent deficits, in terms of the accumulation of public debt relative to

other assets in private portfolios (including money), and their interest rate and debt service consequences. These constraints are general, but differ in intensity among countries. Medium-term portfolio implications may inhibit the ability of governments to sustain a structural budget stance which may be desirable purely on stabilization grounds. The constraints on action caused by a past or prospective accumulation of debt reduce the flexibility available to governments in setting structural deficit targets purely in accordance with saving criteria.

If government debt were to expand in line with the long-run portfolio demand for government stocks then the structural deficit would not be "unbalanced" in the sense of causing structural problems in financial markets. There appears to be no generally optimal ratio of government debt to GDP; any fixed debt/GDP ratio might, within wide bounds, be said to be a sustainable position for governments, depending on the portfolio demand for government debt on the part of financial investors. Governments can even allow for an increasing debt/GDP ratio if increasing private wealth creates a demand for bonds³². If, however, debt accumulates more rapidly than is desired, or is expected to do so in the future, the anticipated interest rate or inflation effects may tend to impair economic performance. Thus, if a stable ratio of government debt to GDP were to be taken as a guide to portfolio balance, the longer-run adequacy and sustainability of any structural budget norm would need to be judged according to its compatibility with such balance.

On average, between **1970** and **1984** the general government gross debt/GDP ratio for the OECD rose by about 50 per cent, from **20** to **31** per cent of GDP (Table 5)³³. The fastest expansion occurred in Europe, where the ratio is now **39** per cent, and Japan, where the increase was **33** percentage points. In the United States the ratio declined until **1981** and has since risen, to reach a still relatively low 27 per cent of GNP.

The point at which government debt/GDP ratios stabilize depends on the growth rate of nominal GDP with which a budget deficit is associated. If the target is to stabilize debt as a proportion of GDP then debt can, of course, rise as fast as GDP. Debt would be rising this fast when the ratio of the budget deficit to GDP was at a level given by the debt/GDP ratio multiplied by the growth rate of the economy³⁴. The United States, for instance, with a net general government debt/GDP ratio of 26 per cent in **1983**, could (on the growth assumptions adopted in the **1985** budget) run a deficit of 2 per cent from **1983** to **1988** without increasing the debt/GDP ratio in that period. Actually, the average prospective U.S. deficit ratio exceeds this "steady-state" figure and the debt/GDP ratio is likely to increase by about a quarter up to **1988**. Gross federal debt (43 per cent of GNP in **1983**) would increase much faster than this to reach about 55 per cent of GNP. The debt/GDP ratio would also tend to grow in France, Italy and Canada. Projected deficits will be near to the "steady-state" level, at which debt GDP ratios stabilize, in Japan and Germany while the ratio will continue to fall in the United Kingdom.

Table 5. General government net debt/GDP ratios
Percent of GDP/GNP

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
United States	28.4	28.4	26.3	23.5	22.9	25.7	25.9	25.1	23.0	21.1	21.0	20.3	23.6	26.3	27.2
Japan	-6.6	-7.3	-6.5	-6.1	-5.4	-2.1	1.9	5.4	11.3	15.0	17.5	21.0	23.4	25.8	26.6
Germany	-8.2	-7.1	-5.8	-6.7	-4.7	1.0	4.6	7.0	9.4	11.5	14.3	17.5	19.8	21.5	21.7
France	11.5	11.0	9.1	8.3	8.8	11.1	10.9	10.2	10.2	9.8	9.1	10.6	12.5	15.8	17.6
United Kingdom	75.3	70.6	65.8	58.5	55.5	57.9	57.5	56.5	54.1	49.1	48.9	48.2	47.2	49.0	49.8
Italy	39.2	44.1	50.0	52.1	49.2	59.9	60.9	60.7	64.5	65.5	60.0	66.2	70.7	76.2	81.8
Canada	12.2	11.0	9.6	7.6	5.3	7.5	8.3	10.1	12.8	13.9	13.5	13.4	19.1	24.0	27.9
Spain^c	2.9	2.9	2.1	1.7	1.6	1.6	1.2	2.5	3.0	5.0	7.1	10.1	13.9	18.6	22.4
Netherlands^{ac}	50.7	47.8	44.4	39.4	37.2	38.0	37.2	36.9	38.1	40.8	43.8	48.1	53.4	59.3	63.5
Sweden	-24.2	-27.6	-29.7	-31.2	-30.2	-28.9	-29.9	-29.1	-25.5	-20.0	-13.6	-5.3	4.7	11.0	15.0
Belgium	61.4	61.2	59.8	56.7	53.7	54.1	54.2	58.0	60.9	65.4	69.8	82.4	88.8	96.8	102.9
Denmark^c	-2.9	-5.5	-9.1	-12.3	-13.6	-10.1	-7.7	-5.0	-2.2	1.8	7.1	16.3	26.0	34.4	39.7
Norway	2.6	2.6	0.6	-1.4	-1.8	0.7	3.5	9.5	14.0	17.0	14.5	11.7	10.6	8.4	8.1
Finland	-5.1	-7.5	-8.2	-10.9	-10.8	-9.8	-10.8	-10.2	-8.5	-7.0	-6.3	-4.8	-2.0	0.4	1.8
Ireland^b	35.7	35.1	33.2	32.0	37.1	45.9	51.6	50.6	56.3	64.9	69.4	75.1	81.2	88.0	94.6
Total major seven	20.7	20.6	19.6	17.6	17.2	20.8	21.9	22.3	22.7	22.3	22.5	23.5	26.3	29.0	30.4
Total smaller countries	15.7	14.2	12.3	9.9	9.2	10.3	10.4	12.0	14.1	17.4	20.5	25.7	31.1	36.4	40.2
Total of above countries	20.3	20.0	18.9	16.9	16.5	19.8	20.9	21.4	21.9	21.8	22.4	23.7	26.8	29.7	31.3
<i>Memorandum items</i>															
OECD Europe	22.5	22.1	21.5	19.5	19.0	22.9	23.9	24.5	25.7	26.2	26.8	29.9	32.6	35.8	38.2
EEC	27.0	26.7	26.3	24.1	23.5	28.0	29.1	29.6	30.7	30.8	31.0	34.0	36.4	39.5	41.9
Total OECD less U.S.	14.1	13.6	13.3	11.9	11.6	15.2	17.0	18.5	21.0	22.4	23.4	26.3	29.2	32.3	34.4

a) Central and local government net liabilities, excluding social security liabilities.

b) Central government liabilities.

c) OECD estimates for Spain (1970), Netherlands (1970-71), Denmark (1970-74).

Table 6. **Structural budget balances measured at trend (mid-cycle) output**

Percentage of potential GDP/GNP

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
United States	-1.8	-2.3	-1.8	-2.0	-1.1	-2.6	-1.4	-1.2	-0.9	-0.6	-1.1	-0.2	-1.4	-2.0	-2.2
Japan	1.3	1.2	0.0	-0.3	0.2	-2.4	-3.4	-3.7	-5.5	-4.8	-4.7	-4.1	-3.4	-2.8	-1.9
Germany	-1.5	-1.6	-1.4	-0.1	-1.9	-4.8	-3.6	-2.7	-3.1	-3.7	-3.9	-3.8	-2.3	-0.9	0.3
France	-0.4	-0.6	-0.9	-0.9	-0.6	-1.7	-1.1	-1.5	-3.1	-2.1	-0.5	-1.5	-1.9	-2.0	-1.4
United Kingdom	0.7	-0.7	-3.1	-5.9	-6.0	-5.5	-5.7	-4.0	-6.1	-5.5	-3.5	-0.5	1.0	-0.7	-0.4
Italy	-6.0	-7.5	-9.2	-9.1	-8.9	-10.9	-9.2	-8.1	-9.9	-10.5	-9.4	-12.9	-12.8	-10.5	-10.2
Canada	0.3	-1.0	-1.3	-0.9	0.0	-3.5	-3.1	-3.3	-4.0	-2.7	-2.8	-1.6	-2.3	-3.0	-3.2
Spain	-0.3	-1.3	-0.9	-0.5	-1.6	-1.0	-1.3	-1.8	-2.7	-2.1	-2.0	-2.3	-4.5	-4.7	-4.2
Australia	2.2	1.2	1.2	-1.8	1.3	-0.8	-3.3	0.3	-1.0	-0.5	0.7	0.6	1.4	-2.3	-3.6
Netherlands	-3.5	-3.2	-3.1	-2.8	-3.8	-3.6	-4.6	-3.1	-3.5	-4.0	-4.2	-4.4	-4.6	-3.8	-3.5
Sweden	3.3	4.7	4.0	2.9	-0.4	0.4	2.8	2.5	1.0	-2.9	-3.7	-3.2	-3.8	-2.8	-2.3
Belgium	-3.6	-3.9	-5.7	-6.4	-6.0	-5.5	-7.5	-5.8	-5.9	-6.8	-9.1	-10.7	-9.3	-8.6	-7.8
Austria	1.6	1.9	1.8	0.8	0.7	-1.0	-3.2	-2.7	-2.0	-2.9	-2.1	-0.7	-1.8	-2.7	-2.1
Denmark	2.4	3.6	2.3	3.1	3.1	0.8	-0.7	-0.9	-0.2	-2.7	-2.4	-3.5	-7.5	-6.4	-5.3
Norway	3.0	4.2	4.5	6.1	5.0	4.5	3.0	2.2	1.5	2.0	4.0	5.1	5.2	5.1	2.2
Finland	4.8	6.0	4.2	5.2	4.0	2.9	6.3	5.6	4.0	1.1	-0.2	1.4	-0.4	-1.5	-1.8
Greece	-0.9	-1.9	-2.1	-3.8	-2.4	-3.8	-3.3	-2.4	-2.4	-2.7	-5.4	-11.7	-8.2	-7.5	-7.3
Ireland	-4.0	-3.5	-4.2	-5.5	-8.3	-11.8	-7.1	-8.0	-10.7	-12.2	-13.2	-14.8	-15.8	-12.0	-10.6
Total major seven	-1.1	-1.6	-1.9	-2.0	-1.7	-3.5	-2.8	-2.5	-3.0	-2.7	-2.6	-2.1	-2.4	-2.4	-2.2
Total smaller countries	0.4	0.4	0.1	-0.5	-0.7	-1.3	-1.9	-1.1	-1.8	-2.5	-2.6	-2.9	-3.4	-3.8	-3.8
Total of above countries	-0.9	-1.4	-1.6	-1.9	-1.5	-3.2	-2.6	-2.3	-2.9	-2.7	-2.6	-2.2	-2.5	-2.6	-2.4
Memorandum items															
OECD Europe	-1.1	-1.5	-2.2	-2.4	-3.0	-4.2	-3.6	-3.0	-4.1	-4.3	-3.7	-3.9	-3.6	-3.2	-2.6
EEC	-1.6	-2.1	-3.0	-3.2	-3.7	-5.0	-4.4	-3.6	-4.8	-4.9	-4.1	-4.5	-3.8	-3.3	-2.6
Total OECD less U.S.	-0.3	-0.7	-1.5	-1.8	-1.9	-3.6	-3.5	-3.1	-4.3	-4.2	-3.7	-3.6	-3.3	-3.0	-2.5

Structural budget deficits and the trend accumulation of debt

Structural budget estimates do not – as measured – give any insight into changes in government indebtedness, because the total deficit over the cycle is what determines the longer-run rate of debt accumulation, not the aggregate of peak-cycle deficits. Table 6 provides a structural budget balance measure which is more consistent with trend government debt accumulation than the more usual structural budget balance indicator. It defines "built-in stabilizers" as the cyclical variation of the deficit around its mid-cycle trend, rather than as the amount by which the budget diverges from its peak-cycle balance. Such stabilizers sum to zero over the cycle and are thus constrained to be temporary in stock as well as flow terms. The resulting structural budget balances are then eventually equal, in aggregate, to the sum of actual budget balances. They are, in this respect, more consistent with debt stock developments. The "stock correction" applied in this case is the simple one of adding the average value of built-in stabilizers to the conventional structural budget measure, so that the mid-cycle and peak-cycle measures give (approximately) equivalent estimates of year-to-year discretionary changes.

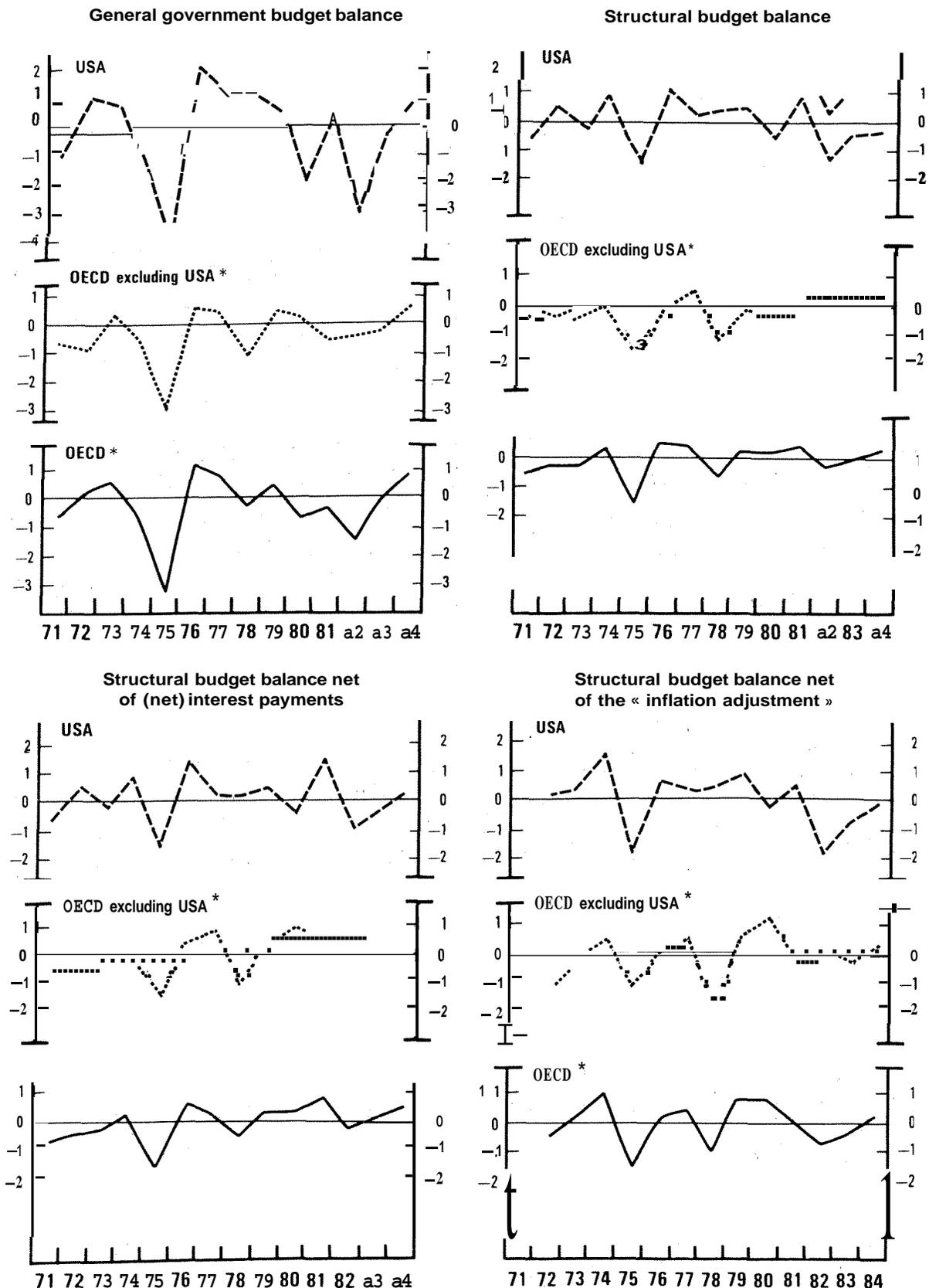
Judging the appropriateness of structural budget balance trends in terms of "stock", or portfolio, constraints becomes more possible when the indicator is consistent with longer-run debt accumulation, though – because financial markets may discount short-term variations in structural deficits – the **average** structural deficit over the cycle is probably a still more appropriate indicator for this purpose (see section V **b** below). Stabilizing the **debt/GDP** ratio would then, for instance, entail an average longer-run budget deficit, to prevent the growth of debt falling below the secular growth of GDP. If, however, the average structural deficit exceeded the "steady-state" level consistent with a stable debt **stock/GDP** ratio, that ratio would rise, though it would stabilize at a new ceiling as long as the structural deficit was not persistently increasing³⁵. The future structural trend in budget deficits may thus be more important than the current structural balance in determining portfolio pressures stemming from the budget.

Structural budget balances net of debt interest

Debt interest pressures may make stable structural deficits and **debt/GDP** ratios difficult to achieve and are crucial to an understanding of the scope for adjusting budget stance to demand conditions. If interest rates rise above the economic growth rate, spending cuts or tax increases would be necessary to ensure that deficits and **debt/GDP** ratios did not increase persistently, with adverse consequences for price and output stability.

Where governments are responsible for education, health, transport etc., which call for investment in social overhead capital, public borrowing would be

CHART 3
Indicators of fiscal stance, 1971-1984
 Year-to-year changes in the budget balance, as a percent of GDP/GNP (a)



(a) Annual changes in the Indicators shown in Tables 1, 2, 7 and 8
 * Weighted averages of the countries shown in Table 2

Table 7. **Structural budget balances net of (net) interest payments**

Percentage of potential GDP/GNP

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
United States	1.2	0.5	1.0	0.9	1.8	0.2	1.6	1.8	2.0	2.4	2.0	3.3	2.2	1.8	2.0
Japan	1.5	1.4	0.3	-0.1	0.4	-2.0	-2.8	-2.8	-4.3	-3.5	-3.1	-2.2	-1.3	-0.5	0.5
Germany	-0.5	-0.5	-0.3	0.9	-0.8	-3.4	-1.9	-0.9	-1.2	-1.7	-1.7	-1.4	0.3	1.9	3.2
France	1.4	1.1	0.7	0.7	1.1	0.1	0.8	0.3	-1.2	-0.2	1.4	0.6	0.3	0.4	1.3
United Kingdom	6.5	4.8	2.3	-0.4	-0.3	0.3	0.4	2.2	0.1	0.9	3.7	6.1	7.6	5.8	5.9
Italy	-3.6	-5.0	-6.6	-6.2	-5.7	-6.7	-4.2	-2.8	-3.9	-4.2	-2.9	-5.2	-4.2	-1.9	-1.2
Canada	2.2	0.9	0.6	0.8	1.6	-1.7	-1.2	-1.2	-1.6	0.0	-0.2	1.3	1.3	1.1	1.1
Spain	0.8	-0.2	0.1	0.5	-0.5	0	-0.2	-0.7	-1.6	-0.9	-0.7	-1.0	-3.0	-2.9	-2.3
Australia	5.4	4.4	4.3	1.2	4.2	2.0	-0.4	3.5	2.5	3.2	4.4	4.4	5.5	2.2	1.5
Netherlands	2.2	2.3	2.9	3.1	2.4	2.5	1.6	2.9	2.8	2.5	2.8	3.2	3.6	5.2	6.2
Sweden	3.0	4.2	3.3	2.1	-1.3	-0.6	1.6	1.3	0.3	-3.2	-3.8	-2.6	-2.1	-0.5	0.4
Belgium	0.8	0.5	-1.3	-2.0	-1.4	-1.0	-2.8	-0.7	-0.6	-0.9	-2.4	-2.7	-0.3	0.3	2.1
Austria	3.2	3.4	3.3	2.3	2.2	0.7	-1.1	-0.3	0.7	-0.1	0.9	2.5	1.8	1.0	2.0
Denmark	2.9	3.8	1.9	1.9	1.6	0.7	-0.6	-0.6	0.5	-1.7	-0.8	-0.8	-3.8	-1.2	0.6
Norway	3.3	4.6	4.8	6.3	5.2	4.8	3.5	3.0	2.5	3.2	5.2	6.2	6.2	6.1	3.2
Finland	3.1	6.1	4.3	5.0	3.8	2.8	6.2	5.5	4.2	1.3	0.0	1.7	0.1	-0.9	-1.0
Greece	2.4	1.5	1.3	-0.4	1.2	-0.1	0.7	0.4	0.3	0.1	-0.7	-6.3	-3.3	-2.4	-2.3
Ireland	-0.5	-0.1	-0.9	-2.1	-4.8	-7.7	-2.5	-3.1	-5.3	-6.2	-6.5	-7.3	-6.9	-2.9	-1.1
Total major seven	1.3	0.6	0.4	0.3	0.7	-1.0	-0.1	0.3	-0.2	0.2	0.5	1.3	1.3	1.4	1.9
Total smaller countries	2.7	2.6	2.3	1.6	1.4	0.9	0.4	1.3	0.9	0.4	0.6	0.7	0.7	0.7	1.7
Total of above countries	1.5	0.9	0.6	0.4	0.8	-0.7	0.0	0.4	-0.1	0.2	0.5	1.3	1.2	1.3	1.8

justified not only by the need to utilize private saving, but by the returns on such investment. If, however, government deficits finance consumption, they lead to growing net debt interest payments. If these were to be financed by yet higher deficits, this could lead to an unsustainable situation where debt expands indefinitely, causing, in turn, rising interest rates and lower longer-run growth³⁶. To prevent such an explosive roll-over of interest payments, structural deficits have eventually to be stabilized, which means that the budget deficit net of interest would have to contract. Accumulating government debt has, in this way, resulted in the underlying OECD budget stance – defined in terms of deficits net of interest paid – becoming gradually tighter; the net-of-interest OECD structural budget balance has swung from balance to a surplus of 2 per cent since 1978 (Table 7 and Chart 3). As interest payments and interest rates rise, the scope for flexible responses to demand shocks is removed. Indeed, persistent borrowing has caused OECD governments to concentrate on containing debt at the expense of other stability objectives.

This pressure is likely to continue. The nominal return on government debt currently averages about 9 per cent, and if it remains at that rate up to 1988 it could exceed prospective GDP growth. There is thus the prospect of a further move towards surplus in the net-of-interest structural balance (by $\frac{3}{4}$ to 1 per cent of GDP) as tax increases or public spending cuts are introduced in order to avoid borrowing to finance growing debt service. If the structural budget deficit were allowed to rise with the interest on accumulating debt then the danger would exist that the debt/GDP ratio may increase without limit leading to monetization pressures. Once the rate of interest exceeds the GDP growth rate, governments cannot follow net-of-interest deficit objectives without the budget balance and debt "exploding", and insofar as interest **rates** increase as debt/GDP ratios rise the possibility of this happening rises. A rate of interest above the GDP growth rate has to imply offsetting tax increases or expenditure cuts.

If the recipients of government debt interest payments save most of their marginal income and budget deficits are made up wholly, or more than wholly, of debt service charges, such deficits may have only a small impact on demand³⁷. The fact that the net-of-interest structural budget balance has to adjust to the constraints imposed by debt servicing may thus have implications for structural budget adequacy. When fiscal deficits are persistent and the structural debt interest burden growing, the trend towards surplus in the net-of-interest balance reflects the fact that debt service spending is substituting for other (direct) spending, and preventing tax cuts. Debt service **obligations** thus tend to compound the portfolio constraints arising from structural deficits, restricting the choice of budget stance and leading, possibly, to diminishing fiscal effectiveness. This type of fiscal restraint, of course, has no compensating impact in terms of falling interest rates since financial market pressures remain unchanged.

Table 8. **Inflation-adjusted trend (mid-cycle) structural budget balances**

Percentage of potential GDP/GNP

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
United States	-1.2	-1.0	-0.6	1.1	-0.8	-0.2	0.1	0.5	1.3	1.1	1.4	-0.4	-1.2	-1.4
Japan	0.7	-0.3	-1.1	-1.2	-2.9	-3.4	-3.4	-5.1	-4.4	-3.3	-3.1	-2.7	-2.3	-1.3
Germany	-2.0	-1.8	-0.6	-2.3	-5.0	-3.5	-2.5	-2.9	-3.3	-3.2	-3.0	-1.6	-0.4	0.8
France	0.0	-0.3	-0.3	0.5	-0.6	-0.1	-0.6	-2.1	-1.0	0.7	-0.3	-0.7	-0.8	-0.2
United Kingdom	5.1	1.0	-0.9	1.6	5.3	2.3	3.6	-2.1	0.6	4.0	4.4	4.5	1.5	1.8
Italy	-5.3	-6.5	-3.8	0.7	-2.1	0.2	2.4	-2.7	-1.2	3.3	-1.5	-2.2	-0.4	-2.6
Canada	-0.9	-1.2	-0.9	-0.1	-3.7	-3.3	-3.5	-4.0	-2.5	-2.6	-1.3	-1.8	-2.4	-2.6
Spain	-1.1	-0.8	-0.4	-1.4	-0.8	-1.2	-1.8	-2.5	-1.6	-1.2	-1.3	-3.1	-3.1	-2.6
Australia	3.4	3.3	1.2	5.6	3.2	0.2	3.4	1.1	1.7	3.0	2.6	3.5	-5.5	-2.4
Netherlands	0.7	0.7	0.7	0.1	0.4	-1.2	-0.6	-1.9	-2.3	-1.4	-1.3	-1.7	-2.5	-1.6
Sweden	2.8	2.3	0.8	-3.5	-2.5	-0.3	-1.0	-1.9	-4.8	-6.9	-5.4	-4.8	-3.3	-2.4
Belgium	-1.3	-2.3	-2.2	1.1	1.4	-2.5	-1.7	-3.3	-4.0	-4.8	-5.6	-2.9	-2.5	-2.3
Austria	2.7	2.8	2.0	2.2	0.5	-1.7	-1.3	-1.0	-1.9	-0.2	1.3	-5.1	-1.6	-0.2
Denmark	3.1	1.5	1.6	0.4	-0.7	-2.0	-2.6	-1.5	-3.8	-3.4	-3.8	-7.0	-5.7	-4.4
Norway	4.0	4.3	5.7	4.4	3.8	2.5	1.9	1.3	2.0	4.1	5.3	5.4	5.3	2.3
Finland	5.4	3.5	3.9	2.1	1.0	4.7	4.1	3.0	0.2	-1.6	0.1	-1.4	-2.3	-2.4
Greece	-1.4	-1.3	-1.3	1.5	-1.9	-1.2	-0.3	0.3	1.6	-0.2	-6.4	-3.2	-2.2	-1.7
Ireland	-0.8	-1.7	-2.4	-3.5	-5.5	-1.8	-3.8	-7.8	-6.4	-5.0	-6.5	-9.3	-7.8	-6.7
Total major seven	-0.6	-1.1	-0.9	0.3	-1.3	-1.0	-0.6	-1.5	-0.7	0.0	0.0	-0.7	-1.1	-0.9
Total smaller countries	1.4	1.2	0.8	1.0	0.4	-0.6	-0.1	-1.1	-1.5	-1.2	-1.3	-1.5	-2.1	-2.0
Total of above countries	-0.4	-0.8	-0.7	0.4	-1.1	-0.9	-0.5	-1.5	-0.8	-0.1	-0.1	-0.8	-1.2	-1.1
<i>Memorandum items</i>														
OECD Europe	0.0	-0.9	-0.6	-0.1	-0.7	-0.6	0.0	-2.2	-1.6	-0.1	-0.8	-0.7	-0.7	-0.4
EEC	-0.3	-1.4	-1.0	0.0	-0.8	-0.7	0.1	-2.4	-1.6	0.2	-0.8	-0.5	-0.5	-0.2
Total OECD less U.S.	0.2	-0.6	-0.7	-0.2	-1.3	-1.5	-0.9	-2.9	-2.2	-0.9	-1.3	-1.1	-1.2	-0.8

V. INTEREST PAYMENTS, INFLATION-ADJUSTED DEFICITS AND THE CHOICE OF STRUCTURAL BUDGET INDICATORS

Nominal interest payments and adjustment for inflation

Inflation has been the major factor reducing pressure on **debt/GDP** ratios, at the same time as it has raised interest payments and, hence, structural deficits, inflation reduces the value of outstanding government debt relative to *nominal* GDP, while tending to increase budget **deficit/GDP** ratios: interest rates on government stocks automatically rise to compensate for higher inflation, raising debt service payments. If all government debt were issued at a variable rate, higher interest payments would exactly offset the fall in the value of outstanding liabilities, leaving government **debt/GDP** ratios unchanged. There may thus be little or no connection between changes in general government net **debt/GDP** ratios and conventionally-measured budget deficits, either actual or structural (Jump, 1980; Cukierman and Mortensen, 1983). To create a budgetary *flow* measure consistent with debt *stock* changes, nominal interest payments resulting from inflation need to be excluded from the budget deficit.

However, government debt is issued, for the most part, at a long-term fixed coupon, and that coupon often anticipates inflation incorrectly. Holders of government securities may thus incur a real capital loss, because the inflation-induced fall in the real value of debt – the "inflation adjustment" – exceeds interest paid on public debt. Bond holders would then be subjected to an "inflation tax", equal to the difference between the "inflation adjustment" and net interest received. Governments make corresponding capital gains, reflected in declining **debt/GDP** ratios. A budget deficit measure consistent with a declining real stock of debt would thus need to incorporate not debt service *per se* but the effect of inflation on the real value of household wealth – i.e. the "inflation adjustment". Table 8 gives a set of "inflation-adjusted" (mid-cycle) structural budget balances which allow for the inflationary erosion in the real value of government debt. These are always in greater surplus or lower deficit than unadjusted structural budgets.

Moreover, the *unanticipated* element of inflation (reflected in the fact that the inflation adjustment has been higher than the public sector interest **bill** for long periods) might lower personal spending, because it transfers real wealth from the private to the public sector and induces higher household saving to compensate for this. Allowing for this inflation-induced redistribution of real financial wealth, a nominally expanding structural budget deficit may conceal an underlying trend towards real surplus – in other words towards fiscal restraint. In this case, the loss of bond-holders' purchasing power through inflation needs to be added to government receipts in the same way as any other tax.

With the inflation correction included, a somewhat different budgetary picture emerges from that given by changes in OECD structural budget balances *per se*. In the immediate aftermath of the second oil shock, fiscal stance tightened considerably (by 1% per cent of GDP between 1978 and 1980), as the budgets of OECD economies moved from a "real" deficit of 1½ per cent of GDP into collective real structural budget balance (Table 8 and Chart 3). Subsequently, as inflation has fallen, the inflation-adjusted structural budget stance of the major seven economies has become less restrictive, by 1 per cent of GDP, though this is not evident in the unadjusted structural budget series. This has been accompanied by declining household saving ratios.

The choice of short-term fiscal impact indicators

Inflation-adjusted structural budget balances and the measurement of short-term fiscal impact

The appropriateness of inflation-adjusted structural budget indicators in fiscal policy analysis depends on private sector behaviour. To the extent that "permanent income" is affected by this decline in real personal wealth, consumption will be lower and household savings higher. If the inflation-induced fall in the value of government debt (the "inflation adjustment") exceeds the interest component of the deficit, bond-holders are subjected to an "inflation tax" (a negative real rate of return). When inflation rises unexpectedly the "inflation tax" rises, budget stance tightens and private spending declines. As inflation falls the inflation tax falls and so do private saving ratios. The "inflation-adjusted" structural budget indicator may thus give a more accurate assessment of the demand impact of a given budgetary stance than the (inflation-) unadjusted indicator. Year-to-year changes are especially relevant here.

Thus, from the viewpoint of measuring short-term budget impact, the case for adding inflation-induced changes in bond-holders' real wealth into government tax receipts depends on whether the "inflation tax" on private sector bond-holders affects private spending. If changes in real wealth affect household consumption then the inflation-adjusted indicator may be a more accurate gauge of fiscal impact than the unadjusted one. If, on the other hand, the "inflation premium" in interest receipts is treated as disposable income, the nominal component of interest rates would affect consumption and the "inflation tax" would not. The unadjusted Structural budget indicator would then be the more relevant one.

The choice of indicator is thus an empirical matter, with the evidence pointing to real household wealth (including that held as government debt) as an important determinant of private spending; spending out of real wealth (realised and unrealised capital gains and real interest payments) appears to be positive –perhaps in the

region of 5-10 per cent in the United States for instance (Gylfason, 1981; Yawitz and Meyer, 1980). Correlations between structural budget changes and short-term aggregate demand movements, in both the United States and Europe, tend to underline the importance of taking account of the "inflation tax", while confirming the superiority of an inflation-adjusted over an unadjusted structural balance as a measure of short-term fiscal impulse, at least in countries where the "inflation tax" has been severe³⁸.

Table 9 describes the results of regressions linking structural budget with aggregate demand changes in the alternative forms:

	Unadjusted structural budget	Inflation-adjusted structural budget
	$g = \beta_0 + \beta_1 \Delta B^*$	$g = b_0 + b_1 (\Delta B^* + \Delta A^*);$
where *	= denotes structural (i.e. cyclically-adjusted) budget estimates;	
g	= the real growth rate of GNP/GDP;	
A*	= the inflation adjustment (treated as a budget receipt) so that $(B^* + A^*)$ = the inflation adjusted budget balance;	
B*	= structural budget revenues less expenditures.	
and A	= first difference operator.	

Table 9. Real GNP/GDP growth rate and variations in the structural budget balance^a 1969-1983

	STRUCTURAL BUDGET BALANCE					
	Constant (β_0)	ΔB^*_{t-1} (β_1)	R^2	DW	SE	$\hat{\rho}$
United States	2.905 (0.72)	-1.203 (0.75)	0.16	1.44	2.75	
Europe ^b	2.478 (0.87)	-0.887 (0.58)	0.16	1.99	2.04	0.37 (0.23)
	INFLATION-ADJUSTED STRUCTURAL BALANCE					
	Constant (b_0)	$\Delta(B^* + A^*)_{t-1}$ (b_1)	R^2	DW	SE	$\hat{\rho}$
United States	2.940 (0.66)	-1.361 (0.58)	0.30	1.38	2.52	
Europe ^b	2.589 (0.81)	-0.762 (0.38)	0.25	2.20	1.93	0.36 (0.23)

a) Standard errors are in parenthesis.

b) Four major European countries.

For the United States the inflation-adjusted indicator clearly explains much more of the variation in GNP than the unadjusted indicator³⁹. The coefficient b_1 is larger and more significant than β_1 , confirming that the inflation adjustment is necessary for the accurate capture of fiscal stance. This is also true for Europe (the major four).

Structural budget deficits and interest rates

a) Budget expectations and long-term interest rates

The effect of government debt on interest rates is a matter of significant current controversy, the determinants of interest rates – and their present high levels – being an unsettled area of economic analysis. Earlier research (Feidstein and Eckstein, 1970) pointed to an effect of government debt on interest rates, but the lack of variability in United States debt/GDP ratios has meant that it has been difficult to attribute much of the movement in interest rates to this source during the 1970s. Research in the United States has been inconclusive, often finding little significant budgetary impact on interest rates and sometimes concluding that, if anything, there is a contemporaneous link between current additions to government debt and interest rate falls (Congress of the United States, 1984; United States Treasury, 1984). This is perhaps because debt increases automatically at low points in the cycle when credit availability is high.

The argument that government debt accumulation does *not* affect interest rates rests on the proposition that portfolio pressures are avoided because consumers save more in response to higher budget deficits associated with tax cuts. Or such deficits can so improve companies' cash flow position (relative to the personal sector) as to remove much of the need for the company sector to borrow from households. In this case budget deficits are neutral from the point of view of credit markets, but may distort the allocation of resources and be unwelcome from a supply-side point of view. Counter-arguments have been partially explored in Section IV above.

Expectations, in particular, may be important, while markets may discount purely temporary demands for credit on the part of governments. The rationale for a forward-looking specification lies in the possibilities of capital gains and losses on bond holdings. The return on long-term assets should be equal, in principle, to the sum of the expected short-term rates, plus a premium for forgone liquidity. If, however, bond holders expect either monetary restriction or portfolio imbalances to occur, the ability to switch to money without a capital loss will be jeopardised. The expectation of money and credit market disturbances will then be reflected in current bond prices.

Incorporating both government deficit/savings flow data and the debt stock ratios (Tables 4 and 5) on a forward-looking, trended basis into a "reduced form"

model of interest rate determination leads – for the United States and for a cross-section of OECD countries – to interest rates being positively affected by both government debt and the rate of its accumulation⁴⁰. The data tend to confirm the usually-obtained negative relationship between contemporaneous debt (and deficits) and interest rates. But by averaging debt ratios over the cycle, and allowing for expected debt accumulation, debt/GDP ratios enter positively into interest determination equations, in contrast to results when debt is contemporaneously related to credit costs.

b) *Inflation-adjusted deficits and financial market expectations*

Since inflation raises the rate of growth of nominal income it also raises the budget deficit/GDP ratio at which the debt/GDP ratio will be constant. In a proximate sense, therefore, higher inflation expectations make for a higher sustainable deficit. If financial markets treat the "inflation premium" in interest rates as an accelerated repayment of capital (while discounting cyclical deficits as transitory), then the "inflation-adjusted" structural budget indicator would be a better gauge of financial market pressures than the unadjusted one. With "steady-state" inflation (the rate of price change both fixed and perfectly anticipated) the inflation-adjusted budget would be a measure of possible financial crowding-out stemming from government deficits. Investors in government stocks would not have to unbalance their portfolios in order to buy more government bonds if the nominal value of their financial assets was increasing with inflation as it would be if interest rates properly anticipated inflation. Indeed, they would need to buy more bonds with the nominal interest payments received in order to keep their portfolios balanced.

Government deficits as a proportion of nominal saving appear to be a significant factor in the determination of long-term interest rates. This would seem to confirm the possibility that inflation-adjusted structural deficits may sometimes be better indicators of future crowding out pressures than the unadjusted indicators. (The counterpart of higher government interest payments is included as higher private interest receipts, and hence savings, in the denominator.)

On the other hand, in circumstances of high, variable and uncertain inflation, the real capital losses (past and expected) suffered by bond holders may lead to portfolio resistance on the part of financial investors⁴¹. This would tend (and has tended) to prevent nominal interest payments from being "rolled over" without upward pressure on interest rates. Financial market perceptions may be such that concentrating on the inflation-adjusted deficit may lead to budget financing pressures being understated. The inflation-adjusted structural budget balance is thus not *necessarily* a better indicator of financial market pressures than the structural deficit *per se*.

Nor is it necessarily a better borrowing norm (or target) than the unadjusted deficit. The effect of inflation in eroding the real value of outstanding government debt, reducing debt/GDP ratios and increasing private savings might be seen as a reason for higher government borrowing requirements to compensate for the deflationary transfer of real wealth associated with inflation. To the extent that private saving were higher, the risk of financial crowding-out would be diminished, But where unanticipated inflation has acted as a "tax" in the past, portfolio preferences may switch away from long-term government bonds. This may be used as an argument in favour of structural deficit cuts and disinflation, in order to eliminate the "inflation tax" at source, rather than for compensatory structural deficit expansion. If the unadjusted structural deficit is used as a policy target unanticipated inflation would, for instance, automatically move the "real" budget balance towards surplus, thereby introducing an element of counter-inflationary stability in the face of price shocks.

CONCLUSIONS

Collectively, the OECD budget deficit was 4¼ per cent of GDP in 1983, of which a quarter (about 1 per cent of GDP) might have been structural; the other three-quarters appears to have been cyclical in that it will tend to be eliminated by recovery. The United States general government budget is in smaller structural deficit (¼ per cent of potential GDP) than the rest of the OECD (just under 1 per cent), but, in contrast to the general trend towards lower structural budget deficits elsewhere among the major economies, the US trend is towards higher, and more persistent structural imbalance up to the end of the decade.

The item of expenditure most responsible for the current structural deficit position is the net cost of servicing government debt, which now amounts to nearly 3 per cent of area GDP, compared with 1 per cent in 1970.

The "adequacy" of the present and prospective OECD structural budget stance has to be judged in the context both of "supply side" considerations, which have been given priority in the United States, and the financial market consequences of high deficits, which have been given precedence in the European strategy of using deficit reduction to achieve monetary targets and reduce interest rates. A structural budget approach – i.e. allowing for the effects of the cycle on deficits when setting budgetary targets – has a potentially important role to play, both in assessing the "speed limit" at which budget deficits should adjust (too fast an adjustment may be counter-productive because of the feedback effects on deficits) and in appraising the claims on savings made by government deficits as recovery proceeds.

However, a limitation of an assessment of structural budget adequacy based on matching government borrowing demands with monetary and credit flows is that budget deficits may add to interest rates, and/or debt interest payments, via an accumulating stock of government debt (of which the structural deficit measured at peak output is an inadequate indicator). The "stock" effects of persistent deficits reduce the flexibility available to governments in setting structural deficit targets in accordance with purely flow criteria. Structural budget measures may be made more stock-flow consistent if measured at mid-cycle (in the sense of giving a more accurate indication of trend changes in outstanding government debt). This procedure ensures that "built-in stabilizers" are (re)defined as temporary in stock as well as in flow terms, since they cancel out over the cycle and do not add to longer-run government debt accumulation.

At the same time inflation distorts the relationship between budget deficit/GDP ratios (actual and structural) and government debt/GDP ratios. Inflation depreciates the real value of outstanding debt, raises nominal interest rates and hence debt service payments (which may be seen as accelerated repayments of the loan). This biases both nominal government deficits and private savings upwards. There is therefore also a strong case for "inflation adjusting" the structural budget indicator, to allow for the automatic fall in debt/GDP ratios resulting from price increases. This creates a structural budget indicator most nearly compatible with trend debt accumulation.

Moreover, the "inflation adjustment" is sometimes unanticipated, and acts as a tax on private wealth. The inflation-adjusted structural budget (in year-to-year change form) may be a better indicator of the demand impact of the budget than the unadjusted one. This depends on private behaviour – i.e., the relevance of the indicator is "model-dependent" – but the empirical case for preferring the inflation-adjusted indicator to the unadjusted one seems quite firmly based,

Finally, the trend structural budget balance may be a better indicator of credit market pressures than the actual budget balance, because financial markets appear to be forward-looking and discount temporary, cyclical fluctuations in government borrowing. Focusing on medium-term structural deficit control may have a beneficial impact on financial market expectations – and hence on current interest rates – thus allowing greater short-term budgetary flexibility (within the "stock" constraints set by increasing longer-run public indebtedness). In this context, the inflation-adjusted structural deficit would appear to be the more useful guide to "crowding out" pressures if inflation is steady and predictable (since investors could be expected automatically to re-invest their nominal interest receipts in government bonds in proportion to their existing holdings). But when inflation is variable and results in an arbitrary "tax" on bondholders, portfolio demand for government paper is likely to be reduced, so that refinancing the interest component of deficits may cause financial market pressures. The relative merits of inflation-adjusted and unadjusted indicators from a financial market perspective thus depend on both circumstances and policy aims.

NOTES

1. The definition and measurement of structural budget indicators is discussed more fully, with mathematical appendixes, in Muller and Price, **1984**.
2. Internationally-concerted attempts to cut budget deficits may lead to a reduction in aggregate demand and subsequent budget "feedbacks" which make **ex post** deficit and interest rate reductions small. See, for instance, Larsen *et al.* (**1983**).
3. The **OECD Economic Outlook** includes fiscal drag in the "discretionary" component, but this need not, in principle, be so: "high employment" deficit indicators available for the United States distinguish inflation-induced fiscal drag from direct policy shifts. See de Leeuw and Holloway (**1982**).
4. The **ex ante** shift in the budget balance (the change in fiscal stance before allowing for feedbacks) may be seen in terms of a lateral movement in the **IS** curve. This causes "high employment" demand to diverge from potential; the long-run movement in the curve is determined by ensuing domestic and foreign saving responses, while the eventual change in national income will depend on money market responses and interest rate effects. The structural budget approach is thus consistent with models showing long-run financial "crowding-out", complete or incomplete. However, rational expectations and/or "ultra-rationality" models may be based on an IS curve which does not shift in response to government deficit spending, either because the inflationary consequences of money-financed deficits are immediately discounted, or because bond-financed deficits lead to the anticipation of future debt interest payments and raise private saving. In such models, the structural budget indicator would have little or no relevance to demand variations except as "surprises".
5. See Muller and Price (**1984**). The "cyclically-neutral" deficit – that excluding the fiscal impulse – is defined to include both short-run built-in stabilizers, which are neutral because corrected by the cycle, and a normal, longer-run, structural budget deficit, which is neutral because it is compatible with (or essential for) secular equilibrium in the economy.
6. See **United States Budget for Fiscal Year 1972**, p. **7 et seq.**: "In this way, the budget is used as a tool to promote orderly economic expansion. The full employment budget idea is in the nature of a self-fulfilling prophecy. By operating as if we were at full employment we will help bring about that full employment."
7. See Canadian Budget Speech, 28th June, **1982**.
8. **Economic Report of the President**, February **1982**, p. **102**.
9. *Ibid.*, pp. **95-97**.
10. The "high employment" level used by the United States administration is "not so high as to generate inflationary instability" (see **Budget of the United States Government, Fiscal Year 1984**, p. 2-18). Similarly, the Bundesbank estimates of productive potential relate to "normal" capacity utilization under which price stability is "approached as closely as possible" (see **Monthly Report of the Deutsche Bundesbank**, October **1981**, pp. **30 et seq.**)
11. See Muller and Price (**1984**). The methods used to calculate the productive potential estimates in the four "exogenous" economies are not necessarily uniform. However, identical criteria have been imposed insofar as the acceptability of such estimates depends on their generating plausible rates of recovery.

12. Specifically, the sensitivity of the budget balance to the economy will be greater the larger is *(i)* the share of government revenues in GDP; *(ii)* the tax elasticity; and *(iii)* the "generosity" of unemployment benefits; also *(iv)* the lower the productivity per employee, the greater will be the cyclical expenditure on unemployment benefits for a given GDP gap.
13. The difference made to the estimate of structural budget stance by adopting this assumption in preference to one where prices rise with recovery need not, in principle, be great. If both public and private sector prices are flexible, and fiscal indexation operates for revenues and expenditures, the share of the budget deficit in GDP would change only little where prices were assumed to rise with output. On the other hand, if expenditures are assumed cash-limited then higher prices will lead to greater fiscal drag and a lower structural deficit because tax receipts will rise while expenditures will not.
14. A number of caveats are in order before the estimates are discussed. *first*, although the measurement of potential output is obviously not inseparable from the calculation of its rate of change, the margin of error in estimating the *growth* of productive potential is probably less than that attaching to its *level*. This makes the estimates more reliable for comparisons of the same country over time than for interpretation of absolute levels at a point in time. *Second*, the "general government financial balance" is not always the most relevant national policy measure: some countries focus on the central government deficit, others on the public sector as a whole, including nationalised industry borrowing. *Third*, all discretionary changes in fiscal policy, *even if temporary*, will influence the structural balance as here defined. *fourth*, the structural budget balance includes interest payments on government debt issued to cover "built-in stabilizers". Even though these may be temporary in flow terms, being phased out by recovery, they lead to a stream of debt-service costs unless "redeemed" by a structural budget surplus.
15. U.S. Department of Commerce, *Survey of Current Business*, February 1984. The surplus in the state and local authority sector rose from \$30 billion in 1980 to \$50 billion in 1983. Most of this is accounted for by the surplus in state and local employee pension funds. Including this item in public sector savings is unusual since, where pensions are funded such surpluses are counted as part of private sector savings (see Ruggles and Ruggles, 1983). Applying this treatment to the United States would raise the general government structural deficit by 1 per cent of GNP.
16. The capacity utilisation figure published by the Bundesbank is higher than that used by the Council of Economic Experts, which would give a German structural budget *deficit* of ½ per cent of GDP in 1983.
17. As in the United States the non-federal sector shows a structural surplus which partly offsets the federal deficit. See Department of Finance, Canada, *The fiscal Plan*, February 15 1984, pp. 53-9. See also Bossons and Dungan, (1983) "The Government Deficit: Too High or Too Low?", *Policy and Economic Analysis Programme, Policy Study No. 82-3*, University of Toronto.
18. Medium-term trends in structural budget deficits are more difficult to evaluate. Many OECD governments (including most of the major economies) now publish medium-term budgetary projections, but they are not always interpretable directly in terms of *structural* budget objectives, since the degree to which deficit targets are considered to be independent of the level of economic activity is not usually made explicit. (For a description of medium-term budgetary objectives see Chouraqui and Price (1983) Table 4.) If GDP projections change so will the cyclical component of the deficit. To the extent that deficit targets are not allowed to adjust to the cycle, "discretionary" action would then be needed to offset such a change, altering the structural stance of the budget. Faster economic recovery, for instance, would reduce the "built-in stabilizer" component of the deficit and allow fiscal relaxation (higher structural deficit or lower surplus). A given budgetary target may then be compatible with any combination of cyclical and structural components, depending on the strength or weakness of the economy.
19. Budget of the United States FY 1985, p. 3-55.
20. *Survey of Current Business*, April 1982.
21. See OECD, *Public Expenditure Trends*, Paris, 1978, pp. 24 *et seq.*

22. See, for instance, The *United States* Budget in Brief, Fiscal Year **1984**, p. **19**, where it is stated that the "historic record makes clear that the current financial burden of the social contract was not originally anticipated".
23. The **1984** Budget cites the case of indexed unemployment benefits, stating that errors in the indexation procedure have resulted in replacement rates rising temporarily to **55** per cent compared with the **33** per cent norm on which the system was based. (United States Budget in Brief, Fiscal Year **1984**, p. **19**).
24. If price rises were accurately anticipated, the "inflation adjustment" would be lower than the interest bill by a factor sufficient to give bond-holders a real rate of return. If inflation is unanticipated, however, the real rate of return defined in this way may be negative. See Chouraqui and Price (**1983**) p. **22**.
25. For a discussion of supply-side issues see Chouraqui and Price (**1984a**) pp. **19-20**. For a comparison of United States and European fiscal strategies see also Chouraqui and Price (**1984b**).
26. Such a strategy – allied sometimes to a nominal income planning framework, as in the United Kingdom – is stabilizing vis-a-vis inflation, but not, in the short term, to output. The higher inflation, the lower will be real growth and the higher the automatic stabilizer component of the deficit; the system will then trigger "discretionary" budget restraint to offset this. Conversely, the higher the rate of real growth the greater the scope for reducing the structural budget surplus. The Medium-term Financial Strategy (MTFS), makes provision for a "fiscal adjustment" if the ratio of public sector borrowing to GDP should be lower than expected. Budgetary policy is thus designed to respond in an automatically stabilizing way with respect to inflation (higher inflation bringing budget restraint); but, at the same time, short-term swings in output will be accentuated.
27. The analysis here is purely in "flow" terms; the extent to which the impact of public sector deficits depends on the "stock" effects of government dissaving (portfolio pressures and net debt service costs) are brought into the analysis below. If budget deficits finance public consumption, the saving ratio might increase because of *anticipations* of higher taxes. Government consumption would substitute for private consumption and this would imply the "irrelevance" of structural budget/savings norms as economic regulators. The demand impact of the deficit would be nil. However, uncertainty about the incidence of future taxes (cf. note **41**) make a number of 'rational' consumption responses possible in response to government deficits, while empirical evidence does not point to complete "tax discounting" on the part of consumers (Feldstein, **1982**).
28. Whether this leads to lower activity and slower recovery depends inter *alia* on (i) the extent to which companies displaced from longer-term markets borrow from the banks and (ii) the central bank reaction function in terms of money supply responses.
29. In principle, for a group of countries acting in concert the policy constraints posed by intra-area balance of payments problems might be avoided. The appropriate structural deficit rule would (assuming proper exchange rate alignments and an absence of speculative capital flows) approximate to that of a closed economy. Individual balance of payments restraints might be avoided where all countries shifted their structural budget (and export schedules) at once.
30. From the point of view of financial markets gross flows are relevant, since part of capital consumption allowances accrue in liquid form and enter capital markets. In the longer run net saving is the more significant, since this determines the capital stock, real growth and real rates of interest.
31. This could be so where (for instance) European economies tightened monetary conditions to prevent too great a depreciation of their currencies and/or where tax offsets available to domestic spenders differed between countries. See Chouraqui and Price (**1984b**).
32. For a model which equates balanced government debt accumulation with GDP growth, see Cukierman and Mortensen (**1983**). However, if government bonds add to "net wealth" (i.e. if fiscal policy raises activity over the cycle) then this will itself add to private wealth and portfolio expansion.
33. Changes in net debt/GDP ratios (Table 5) are not directly derivable from the financial balance figures (Table 7). See Muller and Price (**1984**), p. 11.

34. The debt/GDP ratio would be stable if $b_t = d_{t-1}(g/(1+g))$, where b_t is the budget balance/GDP ratio; d = the debt/GDP ratio, and g = the nominal growth rate. See Muller and Price (1984) p. 57.
35. This ceiling is achieved where the growth of GDP ($g/(1+g)$) equals the ratio of the budget deficit to outstanding debt (b/d); at this point debt and GDP would be increasing at the same rate and d would stabilize at $b((1+g)/g)$. The fact that government debt tends to a ceiling with a fixed budget deficit may not imply a sustainable fiscal stance; financial market effects may still be such that governments may feel the need to cut back deficits to promote long-run growth.
36. Where the budget deficit exclusive of interest paid (b^*) is a fixed proportion of GDP, the debt ceiling would rise towards a ceiling of $b^*/(g-r)$. This is unstable when $r \leq g$, since the denominator becomes zero or negative: the debt/GDP ratio would then tend to infinity.
37. However, real interest payments are likely to affect private spending to some degree. Individuals' longer-run spending is generally seen to depend not just on their disposable income but on their wealth' (i.e. cumulative savings), and real interest payments are additions to household financial wealth. Moreover, if government indebtedness represents a net addition to total savings (which would be so if a higher level of aggregate spending and saving were sustained over the cycle by fiscal deficits), this could have long-run effects on the level of private spending. Thus, against the fact that debt interest has a low demand weight has to be set the possibility that the government debt/GDP ratio may also affect the level of demand by increasing personal wealth.
38. Such correlations relate only to the short-term impact of fiscal policy and have undefined long-run properties. The stance of monetary policy is unspecified in the regression, though this would be expected to alter the short-term impact of policies, while the longer-run impact depends, *inter alia* on the cumulative "stock" effects of budget deficits. Furthermore, in relating deficit shifts to GDP there is the risk of modelling a fiscal policy reaction function: for instance, a perfectly counter-cyclical policy, which stabilized GDP growth around its trend, would mean a zero correlation between changes in the structural deficit to changes in the growth rate.
39. Here the coefficients b_1 and β_1 should be negative if increases in the high employment surplus reduce growth and vice versa. "Tax discounting" would imply $\beta_1 = b_1 = 0$ since the structural budget balance would not affect GDP. Otherwise, a change in the structural budget has a one-period effect on the growth rate (during the year following that in which the change was made), the growth rate reverting to normal if no further budget change are introduced. The structural deficit thus has a level effect on GDP, but the long-run growth rate is independent of fiscal policy. Eisner and Pieper (1984) regress the US growth rate on the *level* of the structural budget balance fiscal stance, which implies a shift in public sector demand permanently changes the growth rate. They conclude that the adjusted high employment surplus of the federal government is "remarkably closely related to subsequent declines in real GNP".
40. The estimating equation is a "reduced form" derived from a structural portfolio balance/liquidity preference specification of money, bond and equity markets, where both private wealth (asset demands) and relative asset supplies help determine (via asset substitution) the relative prices of financial assets:

$$R_b = \beta_0 + \beta_1 Z^* + \beta_d D^* + \beta_b (B/S)^*$$

where

R_b = the long-term bond rate;

D^* = cyclically-adjusted government debt (defined as a moving average);

and

$(B/S)^*$ = the ratio of the general government deficit to private gross private saving, averaged as for D (a deficit being a positive claim on saving); and

Z = a vector of independent variables, relating to money market conditions (the money supply and real permanent income), the equity market (profitability), the current balance of payments, private sector financial wealth and the expected rate of inflation. .

Asterisks (*) relate to forward-looking variables, to allow for expectational influences stemming from the budget deficit. With moving averages based on year $t-4$ to year $t+4$ (up to four years ahead) in the United States and on year $t-2$ to year $t+2$ elsewhere, both D^* and $(B/S)^*$ emerge as significant determinants of long-term interest rates.

41. The demand schedule for government debt is likely to depend on expectations about how governments intend to service and redeem the debt. In a "Ricardian" regime where future tax increases were anticipated, government bonds would be easily financed. A change in regime, due to investors' fears of future monetization, might make lenders more reluctant to hold their wealth in bond form. See Sargent (1982).

BIBLIOGRAPHY

- Bossons, J. and D.P. Dungan, (1982), "The Government Deficit: Too High or too Low?", Policies and Economic Analysis Programme, *Policy Study* No. 82-3, University of Toronto.
- Chouraqui, J-C and R.W.R. Price, (1984a), "Medium-Term Financial Strategy; the Co-ordination of Fiscal and Monetary Policies", *OECD Economic Studies*, No. 2.
- Chouraqui, J.C. and R.W.R. Price, (1984b), "Budget Deficits in Europe and the United States: Fiscal Policy Asymmetry and the Sustainability of the Current Recovery", *Europe and the Dollar*, Istituto Bancario San Paolo di Torino, Turin, (June).
- Congress of the United States, (1984), Congressional Budget Office, "The Economic Outlook", (February).
- Cukierman A. and J. Mortenson, (1983), "Monetary Assets and Inflation-induced Distortions of the National Accounts", *EEC Economic papers*, 15.
- de Leeuw F. and T.M. Holloway, (1982), "The High Employment Budget: Revised Estimates and Automatic Inflation Effects", U.S. Department of Commerce, *Survey of Current Business*, (April).
- de Leeuw F. and T.M. Holloway, (1983), "Cyclical Adjustments of the Federal Budget and Federal Debt", U.S. Department of Commerce, *Survey of Current Business*, (December).
- Deutsche Bundesbank, (1981), *Monthly Report*, (October).
- Eisner, R. and P.J. Peiper, (1984), "A New View of the Federal Debt and Budget Deficits", *American Economic Review*, (March).
- Feldstein, M. and O. Eckstein, (1973), "The Fundamental Determinants of the Interest Rate", *Review of Economics and Statistics*, Vol. 52, (November).
- Feldstein, M., (1982), "Government Deficits and Aggregate Demand", *Journal of Monetary Economics*, 9.
- Gylfason, T., (1981), "Interest Rates, Inflation and the Aggregate Consumption Function", *Review of Economics and Statistics*, (May).
- Jump, G.V., (1980), "Interest Rates, Inflation Expectations and Spurious Elements in Measured Real Income and Saving", *American Economic Review*, Vol. 70.
- Larsen, F., J. Llewellyn and S. Potter, (1983), "International Economic Linkages", *OECD Economic Studies*, No. 1.
- Muller, P. and R.W.R. Price, (1984), "Structural Budget Deficits and Fiscal Stance", OECD Economics and Statistics Department, *Working Paper 75*, (July).
- Price, R.W.R. and J-C Chouraqui, (1983), "Public Sector Deficits; Problems and Policy Implications", *OECD Occasional Studies*, (June).
- Sargent T., (1982), "Beyond Demand and Supply Curves in Macroeconomics", *American Economic Review*, Vol. 72, (May).
- United States Treasury, (1984), "The Effect of Deficits on Prices and Financial Assets: Theory and Evidence", *mimeo*.

United States Government, *Economic Report of the President*, various issues.

United States Government, *Budget of the United States Government*, FY 1972, 1982, 1984, 1985.

Wallich, H.C., (1982), "Budget Outcomes, Debt and Monetary Policy", Federal Reserve System, (2nd December).

Yawitz, J.B. and L.H. Meyer, (1980), "An Empirical Investigation of the Extent of Tax Discounting", *Journal of Money, Credit and Banking*, (May).